



CONTAINS NO CBI  
GE Aerospace

Automated Systems Department  
General Electric Company  
P.O. Box 588, Burlington, MA 01803  
617 229-5000

ORIGINAL

91 FEB 13 PM 12:19  
Original Document

January 31, 1991

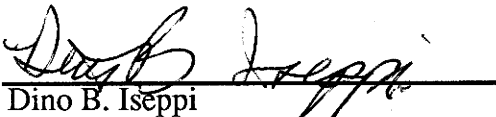
Document Processing Center  
Office of Toxic Substance, TS - 790  
U. S. Environmental Protection Agency  
401 M. Street, SW  
Washington, DC 20460

Attention: CAIR Reporting Office

The attached CAIR report is being submitted per 40 CFR Part 704 for the General Electric Facility located in Burlington, MA .

If you have any questions or need more information about this about this report , please call me at 617-229-3359.

Sincerely,

  
Dino B. Iseppi  
Senior Environmental  
Safety Engineer

Attachment : CAIR Report



Form Approved  
OMB No. 2010-0019  
Approval Expires 12-31-

CONTAINS NO CBI

UNITED STATES ENVIRONMENTAL PROTECTION AGENCY  
Comprehensive Assessment Information Rule  
REPORTING FORM

909100000004



001034833M

When completed, send this form to:

Document Processing Center  
Office of Toxic Substances, TS-790  
U.S. Environmental Protection Agency  
401 M Street, SW  
Washington, DC 20460  
Attention: CAIR Reporting Office

For Agency Use Only:

Date of Receipt: \_\_\_\_\_

Document  
Control Number: \_\_\_\_\_

Docket Number: \_\_\_\_\_

SECTION 1 GENERAL MANUFACTURER, IMPORTER, AND PROCESSOR INFORMATION

PART A GENERAL REPORTING INFORMATION

1.01 This Comprehensive Assessment Information Rule (CAIR) Reporting Form has been

completed in response to the Federal Register Notice of..... 06 | 14 | 89  
CBI mo. day year

☐ a. If a Chemical Abstracts Service Number (CAS No.) is provided in the Federal Register, list the CAS No. .... 000584 - 84 - 9

☒ b. If a chemical substance CAS No. is not provided in the Federal Register, list either (i) the chemical name, (ii) the mixture name, or (iii) the trade name of the chemical substance as provided in the Federal Register.

(i) Chemical name as listed in the rule .....

(ii) Name of mixture as listed in the rule ....

(iii) Trade name as listed in the rule .....

☒ c. If a chemical category is provided in the Federal Register, report the name of the category as listed in the rule, the chemical substance CAS No. you are reporting on which falls under the listed category, and the chemical name of the substance you are reporting on which falls under the listed category.

Name of category as listed in the rule .....

CAS No. of chemical substance ..... 000000 - 00 - 00

Name of chemical substance .....

1.02 Identify your reporting status under CAIR by circling the appropriate response(s).

☒ Manufacturer ..... 1

☐ Importer ..... 2

Processor ..... ☒ 3

X/P manufacturer reporting for customer who is a processor ..... 4

X/P processor reporting for customer who is a processor ..... 5

☐ Mark (X) this box if you attach a continuation sheet.

1.03 Does the substance you are reporting on have an "x/p" designation associated with it in the above-listed Federal Register Notice?

CBI

☐ Yes ..... ☒ Go to question 1.04  
☐ No ..... ☐ Go to question 1.05

1.04 a. Do you manufacture, import, or process the listed substance and distribute it under a trade name(s) different than that listed in the Federal Register Notice? Circle the appropriate response.

CBI

☐ Yes .....  
☐ No ..... (1)

b. Check the appropriate box below: (NA)

☐ You have chosen to notify your customers of their reporting obligations

Provide the trade name(s) ....

☐ You have chosen to report for your customers

☐ You have submitted the trade name(s) to EPA one day after the effective date of the rule in the Federal Register Notice under which you are reporting.

1.05 If you buy a trade name product and are reporting because you were notified of your reporting requirements by your trade name supplier, provide that trade name.

CBI

☐ Trade name .....

Is the trade name product a mixture? Circle the appropriate response.

Yes ..... (1)

No ..... 2

1.06 Certification -- The person who is responsible for the completion of this form must sign the certification statement below:

CBI

☐ "I hereby certify that, to the best of my knowledge and belief, all information entered on this form is complete and accurate."

DINO B ZEPPI  
NAME

DINO B ZEPPI  
SIGNATURE

1-31-91  
DATE SIGNED

Senior Environmental Engineer (617) 229-3359  
TITLE TELEPHONE NO.

☐ Mark (X) this box if you attach a continuation sheet.

- 1.07 Exemptions From Reporting -- If you have provided EPA or another Federal agency with the required information on a CAIR Reporting Form for the listed substance within the past 3 years, and this information is current, accurate, and complete for the time period specified in the rule, then sign the certification below. You are required to complete section 1 of this CAIR form and provide any information now required but not previously submitted. Provide a copy of any previous submissions along with your Section 1 submission.

CBI

☐

NA

"I hereby certify that, to the best of my knowledge and belief, all required information which I have not included in this CAIR Reporting Form has been submitted to EPA within the past 3 years and is current, accurate, and complete for the time period specified in the rule."

NAME

SIGNATURE

DATE SIGNED

TITLE

( )

TELEPHONE NO.

DATE OF PREVIOUS  
SUBMISSION

- 1.08 CBI Certification -- If you have asserted any CBI claims in this report you must certify that the following statements truthfully and accurately apply to all of those confidentiality claims which you have asserted.

CBI

☐

NA

"My company has taken measures to protect the confidentiality of the information, and it will continue to take these measures; the information is not, and has not been, reasonably ascertainable by other persons (other than government bodies) by using legitimate means (other than discovery based on a showing of special need in a judicial or quasi-judicial proceeding) without my company's consent; the information is not publicly available elsewhere; and disclosure of the information would cause substantial harm to my company's competitive position."

NAME

SIGNATURE

DATE SIGNED

TITLE

( )

TELEPHONE NO.

☐ Mark (X) this box if you attach a continuation sheet.

### 1.09 Facility Identification

M A      0 1 8 0 3 -- ( ) ( ) ( ) ( )  
State                      Zip

Other SIC Code .....( ) ( ) ( ) ( )

C T      0 6 4 3 1 --              
State                      Zip

Employer ID Number .....[1][4][0][6][8][9][3][4][0]

6



NA

( ) Mailing Address ( ) ( ) ( ) ( ) ( ) ( ) ( ) ( ) ( ) ( ) ( ) ( ) ( ) ( ) ( )  
Street

( ) ( ) ( ) ( ) ( ) ( ) ( ) ( ) ( ) ( ) ( ) ( ) ( ) ( )  
City

( ) ( )      ( ) ( ) ( ) ( ) ( ) -- ( ) ( ) ( )  
State                  Zip

Employer ID Number .....( ) ( ) ( ) ( ) ( ) ( ) ( ) ( )

Date of Sale ..... ( ) ( ) ( ) ( ) ( )  
Mo. Day Ye

[illegible]

Telephone Number .....( ) ( ) ( ) -( ) ( ) ( ) -( ) ( ) ( )

NA)

[illegible]

( ) Mailing Address ( ) ( ) ( ) ( ) ( ) ( ) ( ) ( ) ( ) ( ) ( ) ( ) ( ) ( ) ( ) ( )  
Street

( ) ( ) ( ) ( ) ( ) ( ) ( ) ( ) ( ) ( ) ( ) ( ) ( ) ( ) ( )  
City

[ ][ ]      [ ][ ][ ][ ][ ]--([ ][ ][ ])   
 State                  Zip

Employer ID Number .....( ) ( ) ( ) ( ) ( ) ( )

Date of Purchase ..... [ ] [ ] [ ] [ ] [ ]  
Mo. Day Ye

Contact Person [ ]

Telephone Number .....( ) ( ) ( ) -( ) ( ) ( ) -( ) ( ) ( )

☐ Mark (X) this box if you attach a continuation sheet.



1.16 For each classification listed below, state the quantity of the listed substance that was manufactured, imported, or processed at your facility during the reporting year.

CBI

☐

Classification

Quantity (kg yr)

|  |             |
|--|-------------|
| Manufactured .....   | <u>NA</u>   |
| Imported .....   | <u>NA</u>   |
| Processed (include quantity repackaged) .....                    | <u>7.72</u> |
| Of that quantity manufactured or imported, report that quantity: |             |
| In storage at the beginning of the reporting year .....          | <u>NA</u>   |
| For on-site use or processing .....                              | <u>NA</u>   |
| For direct commercial distribution (including export) .....      | <u>NA</u>   |
| In storage at the end of the reporting year .....                | <u>NA</u>   |
| Of that quantity processed, report that quantity:                |             |
| In storage at the beginning of the reporting year .....          | <u>.51</u>  |
| Processed as a reactant (chemical producer) .....                | <u>0</u>    |
| Processed as a formulation component (mixture producer) .....    | <u>0</u>    |
| Processed as an article component (article producer) .....       | <u>7.72</u> |
| Repackaged (including export) .....                              | <u>0</u>    |
| In storage at the end of the reporting year .....                | <u>.51</u>  |

☐ Mark (X) this box if you attach a continuation sheet.

## PART C IDENTIFICATION OF MIXTURES

1.17 Mixture -- If the listed substance on which you are required to report is a mixture or a component of a mixture, provide the following information for each component chemical. (If the mixture composition is variable, report an average percentage of each component chemical for all formulations.)

CBI

[ ]

| <u>Component Name</u>           | <u>Supplier Name</u>        | Average %<br>Composition by Weight:<br>(specify precision.<br>e.g., 45% ± 0.5%) |
|---------------------------------|-----------------------------|---|
| <u>2,4 Toluene Diisocyanate</u> | <u>Morton Thiokol, Inc.</u> | <u>6.3% (± UK %)</u>  |
| <u>UK</u>                       | <u>Morton Thiokol, Inc.</u> | <u>93.7% (± UK %)</u>   |
|                                 |                             |   |
|                                 |                             |   |
|                                 |                             |   |
|                                 |                             |   |
| Total                           |                             | 100%  |

☐ Mark (X) this box if you attach a continuation sheet.

2.04 State the quantity of the listed substance that your facility manufactured, imported or processed during the 3 corporate fiscal years preceding the reporting year in descending order.

CBI

☐ Year ending ..... 12 | 87  
Mo. Year

Quantity manufactured ..... NA kg

Quantity imported ..... NA kg

Quantity processed ..... 5.66 kg

Year ending ..... 12 | 86  
Mo. Year

Quantity manufactured ..... NA kg

Quantity imported ..... NA kg

Quantity processed ..... 6.69 kg

Year ending ..... 12 | 85  
Mo. Year

Quantity manufactured ..... NA kg

Quantity imported ..... NA kg

Quantity processed ..... 10.8 kg

2.05 Specify the manner in which you manufactured the listed substance. Circle all appropriate process types.

CBI

☐

NA

Continuous process .....

Semicontinuous process .....

Batch process .....

☐ Mark (X) this box if you attach a continuation sheet.

2.06 Specify the manner in which you processed the listed substance. Circle all appropriate process types.

CBI

☐

NA

Continuous process .....  
Semicontinuous process .....  
Batch process .....

2.07 State your facility's name-plate capacity for manufacturing or processing the listed substance. (If you are a batch manufacturer or batch processor, do not answer this question.)

CBI

☐

Manufacturing capacity ..... NA kg  
Processing capacity ..... NA kg

2.08 If you intend to increase or decrease the quantity of the listed substance manufactured, imported, or processed at any time after your current corporate fiscal year, estimate the increase or decrease based upon the reporting year's production volume.

CBI

☐

|                    | Manufacturing<br>Quantity (kg) | Importing<br>Quantity (kg) | Processing<br>Quantity (kg) |
|--------------------|--------------------------------|----------------------------|-----------------------------|
| Amount of increase | NA                             | NA                         | 0                           |
| Amount of decrease | NA                             | NA                         | 7.72                        |

☐ Mark (X) this box if you attach a continuation sheet.

- 2.09 For the three largest volume manufacturing or processing process types involving the listed substance, specify the number of days you manufactured or processed the listed substance during the reporting year. Also specify the average number of hours per day each process type was operated. (If only one or two operations are involved, list those.)

CBI

☐

Days/Year      Average  
Hours/Day

Process Type #1 (The process type involving the largest quantity of the listed substance.)

|                    |            |                 |
|--------------------|------------|-----------------|
| Manufactured ..... | <u>NA</u>  | <u>        </u> |
| Processed .....    | <u>252</u> | <u>6</u>        |

Process Type #2 (The process type involving the 2nd largest quantity of the listed substance.)

|                    |           |                 |
|--------------------|-----------|-----------------|
| Manufactured ..... | <u>NA</u> | <u>        </u> |
| Processed .....    | <u>NA</u> | <u>        </u> |

Process Type #3 (The process type involving the 3rd largest quantity of the listed substance.)

|                    |           |                 |
|--------------------|-----------|-----------------|
| Manufactured ..... | <u>NA</u> | <u>        </u> |
| Processed .....    | <u>NA</u> | <u>        </u> |

- 2.10 State the maximum daily inventory and average monthly inventory of the listed substance that was stored on-site during the reporting year in the form of a bulk chemical.

CBI

☐

|                                 |   |   |
|---------------------------------|---|---|
| Maximum daily inventory .....   | <u>                                </u> | k |
| Average monthly inventory ..... | <u>                                </u> | k |

☐ Mark (X) this box if you attach a continuation sheet.

- 2.11 Related Product Types -- List any byproducts, coproducts, or impurities present with the listed substance in concentrations greater than 0.1 percent as it is manufactured, imported, or processed. The source of byproducts, coproducts, or impurities means the source from which the byproducts, coproducts, or impurities are made or introduced into the product (e.g., carryover from raw material, reaction product, etc.).

CBI

☐

| CAS No.  | Chemical Name            | Byproduct, Coproduct or Impurity <sup>1</sup> | Concentration (%) (specify ± % precision) | Source of Byproducts, Coproducts, or Impurities |
|----------|--------------------------|---|---|---|
| 584-84-9 | 2,4 Toluene Diisocyanate | I   | UK  | Raw Material                                    |
|          |                          |   |   |   |
|          |                          |   |   |   |
|          |                          |   |   |   |
|          |                          |   |   |   |
|          |                          |   |   |   |

<sup>1</sup>Use the following codes to designate byproduct, coproduct, or impurity:

B = Byproduct  
C = Coproduct  
I = Impurity

☐ Mark (X) this box if you attach a continuation sheet.

- 2.12 Existing Product Types -- List all existing product types which you manufactured, imported, or processed using the listed substance during the reporting year. List the quantity of listed substance you use for each product type as a percentage of the total volume of listed substance used during the reporting year. Also list the quantity of listed substance used captively on-site as a percentage of the value listed under column b., and the types of end-users for each product type. (Refer to the instructions for further explanation and an example.)

CBI

☐

| a.                         | b.  | c.   | d.                |
|----------------------------|---|--|-------------------|
| Product Types <sup>1</sup> | % of Quantity<br>Manufactured,<br>Imported, or<br>Processed | % of Quantity<br>Used Captively<br>On-Site | Type of End-Users |
| K                          | UK  | UK   | H                 |
|                            |   |  |                   |
|                            |   |  |                   |
|                            |   |  |                   |
|                            |   |  |                   |
|                            |   |  |                   |

<sup>1</sup>Use the following codes to designate product types:

|  |   |
|--|---|
| A = Solvent  | L = Moldable/Castable/Rubber and additive               |
| B = Synthetic reactant                             | M = Plasticizer   |
| C = Catalyst/Initiator/Accelerator/<br>Sensitizer  | N = Dye/Pigment/Colorant/Ink and additive               |
| D = Inhibitor/Stabilizer/Scavenger/<br>Antioxidant | O = Photographic/Reprographic chemical<br>and additives |
| E = Analytical reagent                             | P = Electrodeposition/Plating chemicals                 |
| F = Chelator/Coagulant/Sequestrant                 | Q = Fuel and fuel additives                             |
| G = Cleanser/Detergent/Degreaser                   | R = Explosive chemicals and additives                   |
| H = Lubricant/Friction modifier/Antivear<br>agent  | S = Fragrance/Flavor chemicals                          |
| I = Surfactant/Emulsifier                          | T = Pollution control chemicals                         |
| J = Flame retardant                                | U = Functional fluids and additives                     |
| K = Coating/Binder/Adhesive and additives          | V = Metal alloy and additives                           |
|  | W = Rheological modifier                                |
|  | X = Other (specify) _____                               |

<sup>2</sup>Use the following codes to designate the type of end-users:

|                 |   |
|-----------------|---|
| I = Industrial  | CS = Consumer                                 |
| CM = Commercial | H = Other (specify) <u>U.S. Defense Dept.</u> |

☐ Mark (X) this box if you attach a continuation sheet.

- 2.13 Expected Product Types -- Identify all product types which you expect to manufacture, import, or process using the listed substance at any time after your current corporate fiscal year. For each use, specify the quantity you expect to manufacture, import, or process for each use as a percentage of the total volume of listed substance used during the reporting year. Also list the quantity of listed substance used captively on-site as a percentage of the value listed under column b., and the types of end-users for each product type. (Refer to the instructions for further explanation and an example.)
- ☒ CBI
- ☐

| a.                         | b.  | c.   | d.                |
|----------------------------|---|--|-------------------|
| Product Types <sup>1</sup> | % of Quantity<br>Manufactured,<br>Imported, or<br>Processed | % of Quantity<br>Used Captively<br>On-Site | Type of End-Users |
| <u>K</u>                   | <u>UK</u>   | <u>UK</u>                                  | <u>H</u>          |
|                            |   |  |                   |
|                            |   |  |                   |
|                            |   |  |                   |
|                            |   |  |                   |
|                            |   |  |                   |
|                            |   |  |                   |

<sup>1</sup>Use the following codes to designate product types:

|  |   |
|--|---|
| A = Solvent  | L = Moldable/Castable/Rubber and additive               |
| B = Synthetic reactant                             | M = Plasticizer   |
| C = Catalyst/Initiator/Accelerator/<br>Sensitizer  | N = Dye/Pigment/Colorant/Ink and additive               |
| D = Inhibitor/Stabilizer/Scavenger/<br>Antioxidant | O = Photographic/Reprographic chemical<br>and additives |
| E = Analytical reagent                             | P = Electrodeposition/Plating chemicals                 |
| F = Chelator/Coagulant/Sequestrant                 | Q = Fuel and fuel additives                             |
| G = Cleanser/Detergent/Degreaser                   | R = Explosive chemicals and additives                   |
| H = Lubricant/Friction modifier/Antiwear<br>agent  | S = Fragrance/Flavor chemicals                          |
| I = Surfactant/Emulsifier                          | T = Pollution control chemicals                         |
| J = Flame retardant                                | U = Functional fluids and additives                     |
| K = Coating/Binder/Adhesive and additives          | V = Metal alloy and additives                           |
|  | W = Rheological modifier                                |
|  | X = Other (specify) _____                               |

<sup>2</sup>Use the following codes to designate the type of end-users:

|                 |   |
|-----------------|---|
| I = Industrial  | CS = Consumer                                 |
| CM = Commercial | H = Other (specify) <u>U.S. Defense Dept.</u> |

☐ Mark (X) this box if you attach a continuation sheet.



2.14 Final Product -- Complete the following table for each type of final product manufactured, imported, or processed at your facility that contains the listed substance other than as an impurity.

☐

NA

a.

b.

c.

d.

| Product Type <sup>1</sup> | Final Product's Physical Form <sup>2</sup> | Average % Composition of Listed Substance in Final Product | Type of End-Users <sup>3</sup> |
|---------------------------|--|--|--------------------------------|
|                           |  |  |                                |
|                           |  |  |                                |
|                           |  |  |                                |
|                           |  |  |                                |
|                           |  |  |                                |
|                           |  |  |                                |

<sup>1</sup>Use the following codes to designate product types:

- |  |  |
|--|--|
| A = Solvent                                    | L = Moldable/Castable/Rubber and additive            |
| B = Synthetic reactant                         | M = Plasticizer                                      |
| C = Catalyst/Initiator/Accelerator/Sensitizer  | N = Dye/Pigment/Colorant/Ink and additive            |
| D = Inhibitor/Stabilizer/Scavenger/Antioxidant | O = Photographic/Reprographic chemical and additives |
| E = Analytical reagent                         | P = Electrodeposition/Plating chemicals              |
| F = Chelator/Coagulant/Sequestrant             | Q = Fuel and fuel additives                          |
| G = Cleanser/Detergent/Degreaser               | R = Explosive chemicals and additives                |
| H = Lubricant/Friction modifier/Antiwear agent | S = Fragrance/Flavor chemicals                       |
| I = Surfactant/Emulsifier                      | T = Pollution control chemicals                      |
| J = Flame retardant                            | U = Functional fluids and additives                  |
| K = Coating/Binder/Adhesive and additives      | V = Metal alloy and additives                        |
|  | W = Rheological modifier                             |
|  | X = Other (specify) _____                            |

<sup>2</sup>Use the following codes to designate the final product's physical form:

- |                      |                           |
|----------------------|---------------------------|
| A = Gas              | F2 = Crystalline solid    |
| B = Liquid           | F3 = Granules             |
| C = Aqueous solution | F4 = Other solid          |
| D = Paste            | G = Gel                   |
| E = Slurry           | H = Other (specify) _____ |
| F1 = Powder          |                           |

<sup>3</sup>Use the following codes to designate the type of end-users:

- |                 |                           |
|-----------------|---------------------------|
| I = Industrial  | CS = Consumer             |
| CH = Commercial | H = Other (specify) _____ |

☐ Mark (X) this box if you attach a continuation sheet.

2.15 Circle all applicable modes of transportation used to deliver bulk shipments of the  
CBI listed substance to off-site customers. (NA)

- ☐ Truck .....  
Railcar .....  
Barge, Vessel .....  
Pipeline .....  
Plane .....  
Other (specify) \_\_\_\_\_

2.16 Customer Use -- Estimate the quantity of the listed substance used by your customers  
or prepared by your customers during the reporting year for use under each category  
CBI of end use listed (i-iv).

- ☐ (NA)  
Category of End Use
- i. Industrial Products
- |                           |       |      |
|---------------------------|-------|------|
| Chemical or mixture ..... | _____ | kg/y |
| Article .....             | _____ | kg/y |
- ii. Commercial Products
- |                           |       |      |
|---------------------------|-------|------|
| Chemical or mixture ..... | _____ | kg/y |
| Article .....             | _____ | kg/y |
- iii. Consumer Products
- |                           |       |      |
|---------------------------|-------|------|
| Chemical or mixture ..... | _____ | kg/y |
| Article .....             | _____ | kg/y |
- iv. Other
- |  |       |      |
|--|-------|------|
| Distribution (excluding export) .....            | _____ | kg/y |
| Export .....                                     | _____ | kg/y |
| Quantity of substance consumed as reactant ..... | _____ | kg/y |
| Unknown customer uses .....                      | _____ | kg/y |

☐ Mark (X) this box if you attach a continuation sheet.

# SECTION 3 PROCESSOR RAW MATERIAL IDENTIFICATION

## PART A GENERAL DATA

- 3.01 Specify the quantity purchased and the average price paid for the listed substance for each major source of supply listed. Product trades are treated as purchases.  
 CBI The average price is the market value of the product that was traded for the listed substance.

☐

Source of Supply

Quantity  
(kg)

Average Price  
(\$/kg)

The listed substance was manufactured on-site.

The listed substance was transferred from a different company site.

The listed substance was purchased directly from a manufacturer or importer.

122.47

\$29.45/kg

The listed substance was purchased from a distributor or repackager.

The listed substance was purchased from a mixture producer.

- 3.02 Circle all applicable modes of transportation used to deliver the listed substance to your facility.

CBI

☐

Truck ..... ①

Railcar .....

Barge, Vessel .....

Pipeline .....

Plane .....

Other (specify) \_\_\_\_\_

☐ Mark (X) this box if you attach a continuation sheet.

3.03 a. Circle all applicable containers used to transport the listed substance to your  
CBI facility.

☐

Bags .....  
Boxes .....  
Free standing tank cylinders .....  
Tank rail cars .....  
Hopper cars .....  
Tank trucks .....  
Hopper trucks .....  
Drums .....  
Pipeline .....  
Other (specify) 9-lb gallon cans .....10

b. If the listed substance is transported in pressurized tank cylinders, tank rail cars, or tank trucks, state the pressure of the tanks. NA

Tank cylinders ..... mmHg  
Tank rail cars ..... mmHg  
Tank trucks ..... mmHg

☐ Mark (X) this box if you attach a continuation sheet.

PART B RAW MATERIAL IN THE FORM OF A MIXTURE

3.04 If you obtain the listed substance in the form of a mixture, list the trade name(s) of the mixture, the name of its supplier(s) or manufacturer(s), an estimate of the average percent composition by weight of the listed substance in the mixture, and the amount of mixture processed during the reporting year.

CBI

☐

| <u>Trade Name</u>           | <u>Supplier or<br/>Manufacturer</u> | <u>Average<br/>% Composition<br/>by Weight<br/>(specify <math>\pm</math> % precision)</u> | <u>Amount<br/>Processed<br/>(kg yr)</u> |
|-----------------------------|-------------------------------------|---|---|
| <u>Solithane 113</u>        | <u>Morton Thiokol, Inc.</u>         | <u>6.3 % (<math>\pm</math> UK%)</u>   | <u>122.47</u>                           |
| <u>                    </u> | <u>                    </u>         | <u>                    </u>   | <u>                    </u>             |
| <u>                    </u> | <u>                    </u>         | <u>                    </u>   | <u>                    </u>             |
| <u>                    </u> | <u>                    </u>         | <u>                    </u>   | <u>                    </u>             |

☐ Mark (X) this box if you attach a continuation sheet.

PART C RAW MATERIAL VOLUME

3.05 State the quantity of the listed substance used as a raw material during the reporting year in the form of a class I chemical, class II chemical, or polymer, and the percent composition, by weight, of the listed substance.

☐

|                   | Quantity Used<br>(kg/yr) | % Composition by<br>Weight of Listed Sub-<br>stance in Raw Material<br>(specify % precision) |
|-------------------|--------------------------|--|
| Class I chemical  | 122.47                   | 6.3% ( $\pm$ UK%)  |
|                   |                          |  |
|                   |                          |  |
| Class II chemical |                          |  |
|                   |                          |  |
|                   |                          |  |
| Polymer           |                          |  |
|                   |                          |  |
|                   |                          |  |
|                   |                          |  |

☐ Mark (X) this box if you attach a continuation sheet.

# SECTION 4 PHYSICAL/CHEMICAL PROPERTIES

## General Instructions:

If you are reporting on a mixture as defined in the glossary, reply to questions in Section 4 that are inappropriate to mixtures by stating "NA -- mixture."

For questions 4.06-4.15, if you possess any hazard warning statement, label, MSDS, or other notice that addresses the information requested, you may submit a copy or reasonable facsimile in lieu of answering those questions which it addresses.

## PART A PHYSICAL/CHEMICAL DATA SUMMARY

- 4.01 Specify the percent purity for the three major<sup>1</sup> technical grade(s) of the listed substance as it is manufactured, imported, or processed. Measure the purity of the substance in the final product form for manufacturing activities, at the time you import the substance, or at the point you begin to process the substance.

CBI

☐

NA -- mixture

|                    | <u>Manufacture</u> | <u>Import</u>  | <u>Process</u> |
|--------------------|--------------------|----------------|----------------|
| Technical grade #1 | _____ % purity     | _____ % purity | _____ % purity |
| Technical grade #2 | _____ % purity     | _____ % purity | _____ % purity |
| Technical grade #3 | _____ % purity     | _____ % purity | _____ % purity |

<sup>1</sup>Major = Greatest quantity of listed substance manufactured, imported or processed.

- 4.02 Submit your most recently updated Material Safety Data Sheet (MSDS) for the listed substance, and for every formulation containing the listed substance. If you possess an MSDS that you developed and an MSDS developed by a different source, submit your version. Indicate whether at least one MSDS has been submitted by circling the appropriate response.

☒ Yes ..... ①  
 No ..... 2

Indicate whether the MSDS was developed by your company or by a different source.

☒ Your company ..... ①  
☒ Another source ..... ②

☐ Mark (X) this box if you attach a continuation sheet.

MORTON THIOKOL INC.

Morton Chemical Division



# Material Safety Data Sheet

## Product Identification

Product Name: S-113 Chemical Name: Isocyanate Terminated Polyol  
Common Name: S-113 Resin CAS Number: None  
Product Use: Coatings and Castings Emergency Phone: 815-338-1800  
Other Phone: 601-475-2121

## Hazardous Ingredients

| Chemical Name        | Common Name | CAS No.  | %   | OSHA PEL | ACGIH TLV |
|----------------------|-------------|----------|-----|----------|-----------|
| Toluene Diisocyanate | TDI         | 584-84-9 | 6.3 |          | 0.005PPM  |

## Physical Data

Boiling Point (760 mm Hg) 250°C Specific Gravity (Water = 1): 1.073  
Vapor Pressure (mm Hg) Not applicable % Non-volatile: 93  
Vapor Density (AIR=1) >6 Evaporation Rate (Ether = 1) <1  
Solubility in Water Not applicable pH Not applicable  
Appearance: Pale Yellow Odor Irritating Pungent Odor

## Fire and Explosion Hazard Data

Flash Point 200°F Flammable Limits Lel N/A Uel N/A

Method Used:

Open Cup

Extinguishing Media:

Foam, dry chemical

Special Fire Fighting Procedures:

Fire fighters should wear NIOSH-MSHA approved self-contained breathing apparatus.

Unusual Fire and Explosion Hazards:

None as far as known.

Hazardous Decomposition Products:

CO, CO<sub>2</sub>, NO<sub>2</sub>, possibly aromatic amines, aldehydes, and ammonia.



---

**Health Hazard Data**

---

|                                    |   |
|------------------------------------|---|
| <b>Oral Toxicity:</b>              | Oral-Rat LD <sub>50</sub> : 5800 mg/Kg <sup>1</sup>   |
| <b>Dermal Toxicity:</b>            | Not established for product. May cause irritating dermatitis and possible sensitization given prolonged or repeated skin contact. |
| <b>Eye Irritation/Corrosivity:</b> | Not established for product. Ocular irritant.   |
| <b>Inhalation Toxicity:</b>        | Not established for product. Inhalation-human TCL: 0.02 ppm/2y  |
| <b>Chronic Toxicity:</b>           | Not established for product.  |

**Effects of Overexposure:**

|                          |   |
|--------------------------|---|
| <b>Ingestion:</b>        | Not established for product. Possible nausea, vomiting, gastrointestinal pain.  |
| <b>Skin Contact:</b>     | Not established for product. May cause irritation, dermatitis and possible skin sensitization given prolonged or repeated skin contact.   |
| <b>Eye Contact:</b>      | Not established for product. Possible irritation, tearing, reddening and blurred vision.  |
| <b>Inhalation:</b>       | Not established for product. Possible respiratory tract, mucous membrane irritation, sensitization. Symptoms may be delayed and could include dry cough, chest tightness, wheezing, shortness of breath, asthmatic-type symptoms. |
| <b>Acute Systemic:</b>   | Not established for product.  |
| <b>Chronic Systemic:</b> | Not established for product. Extended exposure to isocyanate vapors may cause sensitization resulting in impaired pulmonary function.   |

- Notes:**
- Toxicity testing on the product mixture has not been conducted. Comments listed in **Health Hazard Data** pertain to the isocyanate listed in **Hazardous Ingredients**.
  - Persons with pre-existing skin disorders may be more susceptible to isocyanate.
  - In persons with impaired pulmonary function, especially those with obstructive airway diseases, the breathing of isocyanate vapors may cause exacerbation of symptoms due to irritant properties of the isocyanate.

<sup>1</sup> NIOSH RTECS, 1981-82 Edition

---

**Emergency and First Aid Procedures**

---

|                           |   |
|---------------------------|---|
| <b>Ingestion:</b>         | Large amounts of warm water should be taken immediately to reduce the concentration of the chemical. Vomiting should be induced. Additional water should be taken after vomiting occurs. Treatment by a physician should follow immediately.  |
| <b>Skin Contact:</b>      | Remove contamination immediately by washing with large amounts of water. If the exposure is major, the safety shower should be used immediately. Remove all contaminated clothing. The polymer should be wiped off the body with a cloth, and the contaminated area washed with soap and water for at least five minutes. |
| <b>Eye Contact:</b>       | Flush with large amounts of water for 10 to 15 minutes lifting the upper and lower eyelids frequently. Get medical attention immediately.   |
| <b>Inhalation:</b>        | A person showing symptoms of isocyanate irritation should be removed promptly from the contaminated area. If exposure has been severe, artificial respiration should be applied. Get medical attention immediately.   |
| <b>Note to Physician:</b> | Supportive therapy is recommended. No known antidote.   |

5-113 12-11  
p. 3

---

### Reactivity Data

Stability ☒ Stable ☐ Unstable Under ordinary storage conditions.

Conditions to Avoid: Storage at temperatures above 110°F and moisture contact.

Incompatibility: (Materials to Avoid) Oxidizing substances.

Can Hazardous Polymerization Occur: No

Hazardous Conditions to Avoid: Storage at temperatures above 300°F.

Hazardous Decomposition Products and Conditions: CO, CO<sub>2</sub>, NO<sub>2</sub>, possibly aromatic amines, aldehydes, and ammonia, if heated to pyrolysis.

---

### Spill or Leak Procedures

**Response to Small Spills:** Stop discharge and contain spill. It should be cleaned up promptly with solution of 5% aqueous ammonia and 10% isopropyl alcohol. Oil absorbent materials may be sprinkled on spills to assist in cleaning up. Contaminated absorbent should be promptly swept up and removed to a ventilated location or dumped into water or aqueous 5% ammonia. After removal of material, floor should be scrubbed with water in a ammonia solution.

**Response to Large Spills:** Stop discharge and contain spill using dike, barrier or other means. Recover with vacuum truck, sorbents or other means. Place contaminated material in suitable containers for further handling.

**Hazards to Be Avoided:** Do not flush into stream, other bodies of water or storm sewer. Avoid contact with skin or clothing. Other hazards see Fire and Explosion Hazard Data and Health Hazard Data.

**Reportable Quantity:** None established.

**Waste Classification:** May be subject to special conditions for disposal on the operation.

**Disposal Methods:** 1) Recycle, if feasible; 2) incinerate at authorized facilities; and 3) landfill (solidification may be required) in authorized facilities in accordance with federal, state and local regulations.

---

### Control Measures

**Respiratory Protection:**

Should wear NIOSH/MSHA approved self contained breathing apparatus as necessary within equipment limitations. Comply with OSHA 1910.134(CFR, Respiratory Protection. Contaminant levels will vary dependent on the operation. Industrial hygiene consultation is recommended to assist in respirator selection, use and training.

**For Hands, Body:**

Chemical resistant gloves recommended for hand protection, work clothing for general body protection.

**For Eyes:**

Wear safety glasses, chemical goggles, face shield (eight inch minimum) if chemical goggles not available.

**Other:**

Prolonged contact should be avoided.

**Ventilation:**

Provide adequate ventilation to minimize inhalation.

---

### Special Precautions

**Recommended Storage Practice and Conditions:**

Store between 50 and 100°F. Storage at higher temperatures causes polymerization.

**Other Precautions:**

Eye wash and shower should be available. Use under well ventilated conditions. For personal hygiene protection, personnel should wash thoroughly after handling product.

5 13 Rev. 4  

---

**Labeling Information**

---

Dot Shipping Name: Not regulated by DOT.

DOT Identification Number: Not Applicable.

DOT Label: Not Applicable.

**Contents of Precautionary Label:**

**Warning!** Harmful if inhaled or swallowed. Contains Monomeric Isocyanate. May cause allergic skin or respiratory reaction. May cause eye irritation. Do not get in eyes, on skin or on clothing. Do not breathe vapor. Use with adequate ventilation. Use with adequate protective clothing. Keep container closed. Contact with water or humid air generates pressure. Normal operating temperatures are between room temperature and 300°F (150°C). Heating far in excess of 300°F may cause decomposition and emission of toxic fumes. Do not take internally. For industrial use only.

**First Aid:** If eye contact occurs, flush with water for at least 15 minutes. If contracted with skin, use a waterless handcleaner to remove, followed by washing with soap and water. Wash contaminated clothing before reuse. Discard contaminated shoes. If inhaled, remove to fresh air. If not breathing, give artificial respiration, preferably mouth-to-mouth. Call a physician.

**In Case of Fire:** Use water spray or smother with foam, dry chemical, or CO<sub>2</sub>.

**In Case of Spill:** Cover with absorbent clay or sawdust and remove.

**Warning:** This container hazardous when empty. Since empty containers retain product residues (vapor, liquid or solids) all labeled hazardous precautions must be observed. Do not reuse Empty Container for food, clothing or products for human or animal consumption or skin contact without professional cleaning.

---

**Users Responsibility**

---

A bulletin such as this cannot be expected to cover all possible individual situations. As the user has the responsibility to provide a safe workplace, all aspects of an individual operation should be examined to determine if, or where, precautions, in addition to those described herein, are required. Any health hazard and safety information contained herein should be passed on to your customers or employees, as the case may be. Morton Thiokol, Inc. must rely on the user to utilize the information we have supplied to develop work practice guidelines and employee instructional programs for the individual operation and regulations.

---

**Disclaimer of Liability**

The information contained herein is, to the best of our knowledge and belief, accurate. However, since the conditions of handling and use are beyond our control, we make no guarantee of results, and assume no liability for damages incurred by use of this material. All chemicals may present unknown health hazards and should be used with caution. Although certain hazards are described herein, we cannot guarantee that these are the only hazards which exist. Final determination of suitability of the chemical is the sole responsibility of the user. Users of any chemical should satisfy themselves that the conditions and methods of use assure that the chemical is used safely. **NO REPRESENTATIONS OR WARRANTIES, EITHER EXPRESS OR IMPLIED, OF MERCHANTABILITY, FITNESS FOR A PARTICULAR PURPOSE OR ANY OTHER NATURE ARE MADE HEREUNDER WITH RESPECT TO THE INFORMATION CONTAINED HEREIN OR THE CHEMICAL TO WHICH THE INFORMATION REFERS.** It is the responsibility of the user to comply with all applicable federal, state and local laws and regulations.

Nothing contained herein is to be construed as a recommendation for use in violation of any patents or of applicable laws or regulations.

---

April 1986

FORM #C-159

**MORTON THIOKOL, INC.**

Morton Chemical Division



333 W. Wacker Drive, Chicago, Illinois 60606-1292 (312) 807-2000

# Material Safety Data Sheet

GENERAL ELECTRIC

AUTOMATED SYSTEMS DEPARTMENT  
GENERAL ELECTRIC COMPANY • P.O. BOX 355 • BURLINGTON, MASSACHUSETTS 01803 • (617) 229-5000

Date Prepared:  
Supersedes (date):

## Section 1 - Identify

Common Name (used on label):

1890105-1 PART A

Chemical Name:

Trade Name(s) or Synonym(s):

Blue Thixotropic Staking Compound

Formula:

Proprietary

CAS No.:

D.O.T.:

Shipping Name

Hazard Class

I.D. No.

## Section 2 - Hazardous Ingredients

Hazardous Component(s):

CAS No.:

%

Threshold Limit Value

Toluene Diisocyanate (TDI)

584-84-9

6.3

0.005 PPM

Silicon Dioxide (Amorphous)

7631-86-9

99+

20 MPPCF

Other Component(s):

## Section 3 - Physical Characteristics

Appearance and Odor

Pale Yellow, irritating pungent odor

Boiling Point

250°C

Melting Point

Freezing Point

Specific Gravity (H<sub>2</sub>O = 1)

Percent Volatile by Volume (%)

Vapor Density (Air = 1)

Evaporation Rate (\_\_\_\_\_ = 1)

Vapor Pressure (mm Hg)

Solubility in Water

Reactivity in Water

pH

## Section 4 - Fire & Explosion Data

Flash Point

200°F

Flammable Limits in Air % by Volume

Lower N/A

Upper N/A

Auto-ignition Temperature

Extinguisher Media

☒ Foam ☐ Alcohol Foam ☐ CO<sub>2</sub> ☒ Dry Chemical ☐ Water Fog ☐ Other

Special Fire Fighting Procedures

Fire fighters should wear NIOSH-MSHA approved self-contained breathing apparatus

Unusual Fire and Explosion Hazards

None, as far as known.

## Section 5 - Reactivity Data

Stability: Unstable ☐ Conditions Stable ☒ to Avoid

Storage above 110°F and moisture contact

Incompatibility (Materials to Avoid)

Water ☐ Other:

Oxidizing Substances

Hazardous Decomposition Products

CO, CO<sub>2</sub>, NO<sub>2</sub>, possible aromatic amines, aldehydes and ammonia

Hazardous Polymerization

May Occur ☐ Conditions

Will Not Occur ☒ to Avoid

## Section 6 - Health Hazards

OSHA Permissible  
Exposure Limit (P.E.L.)

ACGIH Threshold  
Limit Value (TLV:STEL)

Other Exposure  
Limit Used

Principal Routes of Exposure:

Ocular irritant, inhalation, ingestion, skin contact

Signs and Symptoms

1. Acute Overexposure

of Overexposure: Symptoms of overexposure are asthma-like. Eye contact can cause irritation and possible burns leading to permanent damage. Skin contact can cause redness, swelling and blistering with possible sensitization. Ingestion has a corrosive action on digestive tract.

2. Chronic Overexposure

Medical Conditions Generally Recognized as Being

Aggravated by Exposure:

Asthma, other respiratory disorders.

## Section 7 - Emergency and First Aid Procedures

1. Inhalation Remove victim to fresh air. Artificial respiration or oxygen should be used.  
Get medical help

2. Eyes Flush eyes with water for 15 min. Medical help immediately after.

3. Skin Wash skin with soap and water, remove contaminated clothing, get medical help.

4. Ingestion Large amounts of water, induce vomiting.  
Treatment by a physician should follow immediately.

## Section 8 - Toxicity Data

Acute oral LD50 = 32.0 ml/kg.

## Section 9 - Special Protection Information

Ventilation Local exhaust ventilation required for mixing and use.

Respiratory Protection

(Specify Type Air supplied respirator may be required if ventilation is not adequate to meet TL

Protective

Gloves Rubber

Eye

Protection Goggles

Other Protection

Clothing or Equipment Long-sleeved protective clothing.

## Section 10 - Special Precautions and Spill/Leak Procedures

Precautions to Be Taken  
in Handling and Storage

Keep containers tightly closed. Use only in area with adequate exhaust ventilation. Store in cool, dry area away from oxidizing agents.

Other

Precautions Emergency eye wash and safety shower should be available in work area.

Steps to Be Taken in Case  
Material is Released or Spilled

Clean promptly using solution of 5% aqueous ammonia and 10% isopropanol

Oil absorbent material may be used to assist in cleanup. After cleanup, scrub floor with ammonia solution.

Waste Disposal Methods

Dispose of unreacted material as hazardous waste.

Prepared By: \_\_\_\_\_

- 4.03 Submit a copy or reasonable facsimile of any hazard information (other than an MSDS, that is provided to your customers/users regarding the listed substance or any formulation containing the listed substance. Indicate whether this information has been submitted by circling the appropriate response.

Yes ..... **NA** .....

No .....

- 4.04 For each activity that uses the listed substance, circle all the applicable numbers corresponding to each physical state of the listed substance during the activity listed. Physical states for importing and processing activities are determined at the time you import or begin to process the listed substance. Physical states for manufacturing, storage, disposal and transport activities are determined using the final state of the product.

CBI

☐

| Activity    | Physical State |        |          |               |     |
|-------------|----------------|--------|----------|---------------|-----|
|             | Solid          | Slurry | Liquid   | Liquified Gas | Gas |
| Manufacture | 1              | 2      | 3        | 4             | 5   |
| Import      | 1              | 2      | 3        | 4             | 5   |
| Process     | 1              | 2      | <b>3</b> | 4             | 5   |
| Store       | 1              | 2      | 3        | 4             | 5   |
| Dispose     | 1              | 2      | 3        | 4             | 5   |
| Transport   | 1              | 2      | 3        | 4             | 5   |

☐ Mark (X) this box if you attach a continuation sheet.

- 4.05 Particle Size -- If the listed substance exists in particulate form during any of the following activities, indicate for each applicable physical state the size and the percentage distribution of the listed substance by activity. Do not include particles  $\geq 10$  microns in diameter. Measure the physical state and particle sizes for importing and processing activities at the time you import or begin to process the listed substance. Measure the physical state and particle sizes for manufacturing storage, disposal and transport activities using the final state of the product.

CBI

☐

(NA)

| Physical State |                  | Manufacture | Import | Process | Store | Dispose | Transport |
|----------------|------------------|-------------|--------|---------|-------|---------|-----------|
| Dust           | <1 micron        |             |        |         |       |         |           |
|                | 1 to <5 microns  |             |        |         |       |         |           |
|                | 5 to <10 microns |             |        |         |       |         |           |
| Powder         | <1 micron        |             |        |         |       |         |           |
|                | 1 to <5 microns  |             |        |         |       |         |           |
|                | 5 to <10 microns |             |        |         |       |         |           |
| Fiber          | <1 micron        |             |        |         |       |         |           |
|                | 1 to <5 microns  |             |        |         |       |         |           |
|                | 5 to <10 microns |             |        |         |       |         |           |
| Aerosol        | <1 micron        |             |        |         |       |         |           |
|                | 1 to <5 microns  |             |        |         |       |         |           |
|                | 5 to <10 microns |             |        |         |       |         |           |

☐ Mark (X) this box if you attach a continuation sheet.

## SECTION 5 ENVIRONMENTAL FATE

### PART A RATE CONSTANTS AND TRANSFORMATION PRODUCTS

5.01 Indicate the rate constants for the following transformation processes.

a. Photolysis:

Absorption spectrum coefficient (peak) .... UK (1/M cm) at \_\_\_\_\_ nm  
 Reaction quantum yield,  $\phi$  ..... UK at \_\_\_\_\_ nm  
 Direct photolysis rate constant,  $k_p$ , at ... UK 1/hr \_\_\_\_\_ latitude

b. Oxidation constants at 25°C:

For  $^1O_2$  (singlet oxygen),  $k_{ox}$  ..... UK 1/M  
 For  $RO_2$  (peroxy radical),  $k_{ox}$  ..... UK 1/M

c. Five-day biochemical oxygen demand,  $BOD_5$  ... UK mg/l

d. Biotransformation rate constant:

For bacterial transformation in water,  $k_b$  ... UK 1/hr  
 Specify culture ..... UK

e. Hydrolysis rate constants:

For base-promoted process,  $k_b$  ..... UK 1/M  
 For acid-promoted process,  $k_a$  ..... UK 1/M  
 For neutral process,  $k_n$  ..... UK 1/hr

f. Chemical reduction rate (specify conditions) UK

g. Other (such as spontaneous degradation) ... UK

☐ Mark (X) this box if you attach a continuation sheet.



PART B PARTITION COEFFICIENTS

5.02 a. Specify the half-life of the listed substance in the following media.

| <u>Media</u>  | <u>Half-life (specify units)</u> |
|---------------|----------------------------------|
| Groundwater   | UK                               |
| Atmosphere    | UK                               |
| Surface water | UK                               |
| Soil          | UK                               |

b. Identify the listed substance's known transformation products that have a half-life greater than 24 hours.

| <u>CAS No.</u> | <u>Name</u> | <u>Half-life (specify units)</u> | <u>Media</u> |
|----------------|-------------|----------------------------------|--------------|
| UK             |             |                                  | in           |
|                |             |                                  | in           |
|                |             |                                  | in           |
|                |             |                                  | in           |

5.03 Specify the octanol-water partition coefficient,  $K_{ow}$  ... UK at 25°C  
Method of calculation or determination .....

5.04 Specify the soil-water partition coefficient,  $K_d$  ..... UK at 25°C  
Soil type .....

5.05 Specify the organic carbon-water partition coefficient,  $K_{oc}$  ..... UK at 25°C

5.06 Specify the Henry's Law Constant,  $H$  ..... UK atm-m<sup>3</sup>/mole

☐ Mark (X) this box if you attach a continuation sheet.

5.07 List the bioconcentration factor (BCF) of the listed substance, the species for which it was determined, and the type of test used in deriving the BCF.

Bioconcentration Factor

Species

Test<sup>1</sup>

UK

<sup>1</sup>Use the following codes to designate the type of test:

F = Flowthrough

S = Static

☐ Mark (X) this box if you attach a continuation sheet.

6.04 For each market listed below, state the quantity sold and the total sales value of  
CBI the listed substance sold or transferred in bulk during the reporting year.

☐

| <u>Market</u>                                 | <u>Quantity Sold or<br/>Transferred (kg/yr)</u> | <u>Total Sales<br/>Value (\$/yr)</u> |
|---|---|--------------------------------------|
| Retail sales                                  | _____   | _____                                |
| Distribution -- Wholesalers                   | _____   | _____                                |
| Distribution -- Retailers                     | _____   | _____                                |
| Intra-company transfer                        | _____   | _____                                |
| Repackagers                                   | _____   | _____                                |
| Mixture producers                             | _____   | _____                                |
| Article producers                             | _____   | _____                                |
| Other chemical manufacturers<br>or processors | _____   | _____                                |
| Exporters                                     | _____   | _____                                |
| Other (specify)<br>_____                      | _____   | _____                                |

6.05 Substitutes -- List all known commercially feasible substitutes that you know exist  
for the listed substance and state the cost of each substitute. A commercially  
CBI feasible substitute is one which is economically and technologically feasible to use  
in your current operation, and which results in a final product with comparable  
performance in its end uses.

☐

| <u>Substitute</u>                               | <u>Cost (\$/kg)</u> |
|---|---------------------|
| <u>Polyamine Curing Agent Compound (Part A)</u> | <u>UK</u>           |
| <u>Polyurethane Polymer Compound (Part B)</u>   | <u>UK</u>           |
| _____   | _____               |

☐ Mark (X) this box if you attach a continuation sheet.

## SECTION 7 MANUFACTURING AND PROCESSING INFORMATION

**General Instructions:**

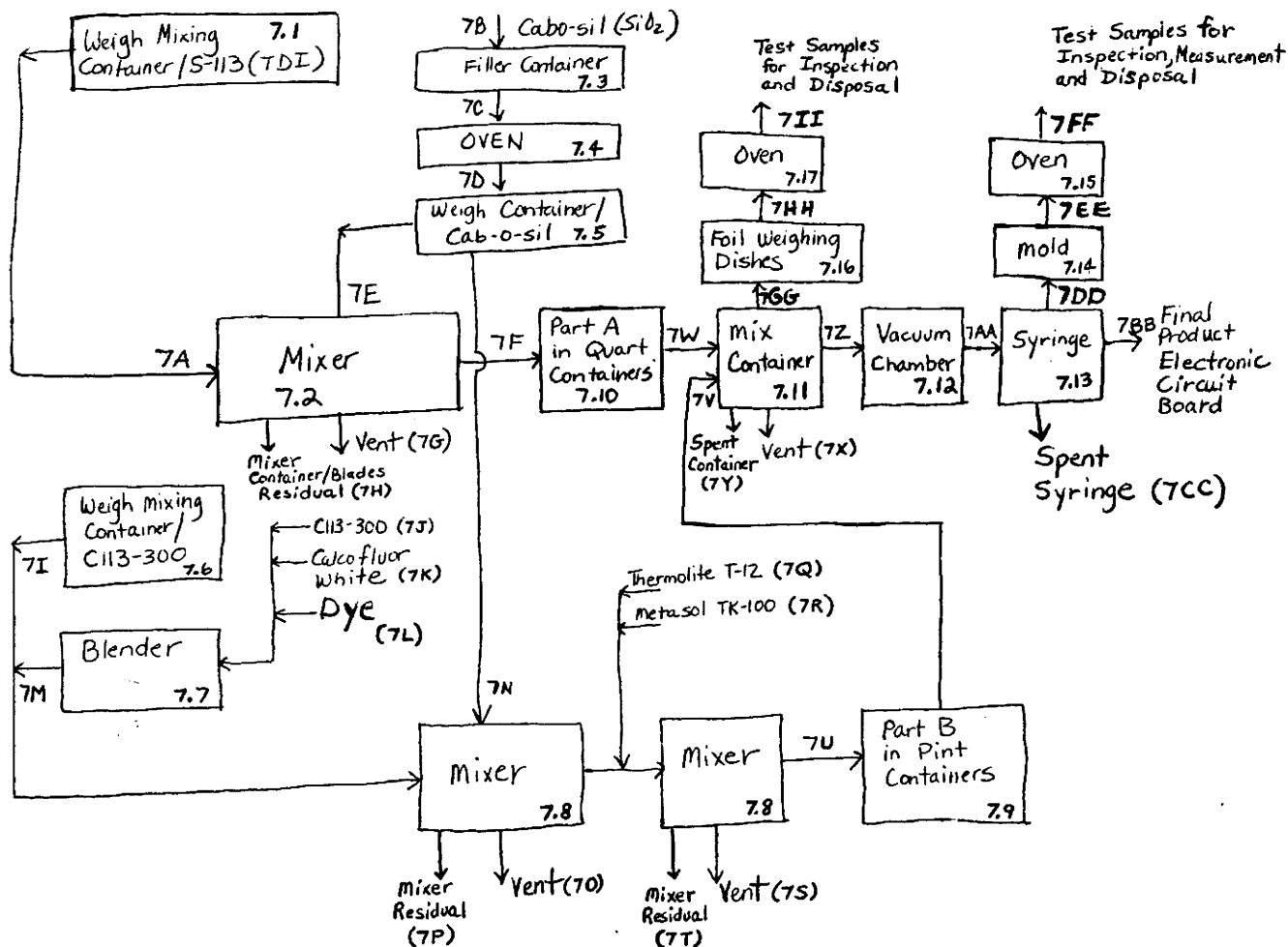
For questions 7.04-7.06, provide a separate response for each process block flow diagram provided in questions 7.01, 7.02, and 7.03. Identify the process type from which the information is extracted.

## PART A MANUFACTURING AND PROCESSING PROCESS TYPE DESCRIPTION

7.01 In accordance with the instructions, provide a process block flow diagram showing the major (greatest volume) process type involving the listed substance.

CBI

[ ] Process type ..... Adhesive Formulation

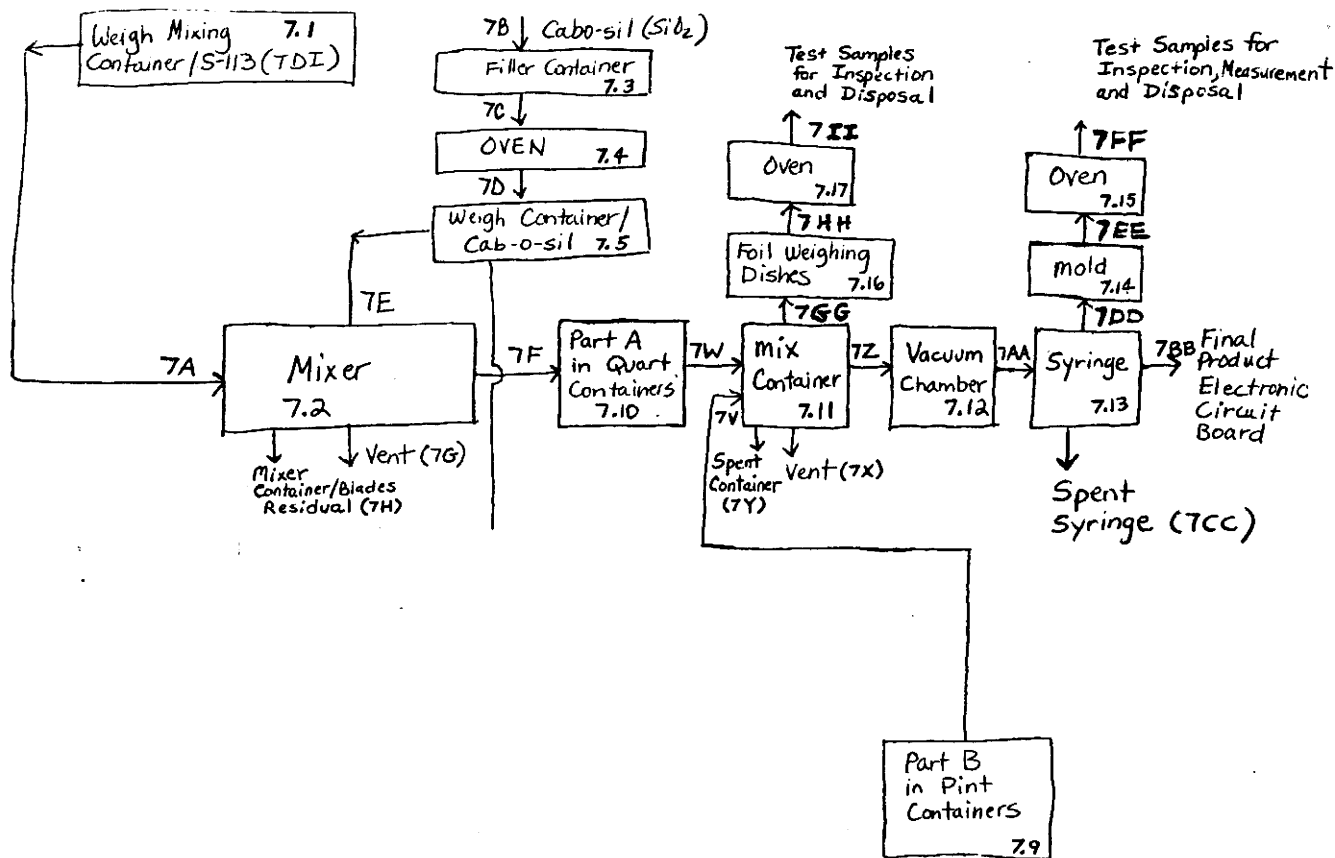


☐ Mark (X) this box if you attach a continuation sheet.

7.03 In accordance with the instructions, provide a process block flow diagram showing a process emission streams and emission points that contain the listed substance and which, if combined, would total at least 90 percent of all facility emissions if not treated before emission into the environment. If all such emissions are released from one process type, provide a process block flow diagram using the instructions for question 7.01. If all such emissions are released from more than one process type, provide a process block flow diagram showing each process type as a separate block.

CBI

☐ Process type ..... Adhesive Formulation



☐ Mark (X) this box if you attach a continuation sheet.

7.04 Describe the typical equipment types for each unit operation identified in your process block flow diagram(s). If a process block flow diagram is provided for more than one process type, photocopy this question and complete it separately for each process type.

CBI

☐ Process type ..... Adhesive Formulation

| Unit<br>Operation<br>ID<br>Number | Typical<br>Equipment<br>Type | Operating<br>Temperature<br>Range (°C) | Operating<br>Pressure<br>Range<br>(mm Hg) | Vessel<br>Composition   |
|-----------------------------------|------------------------------|--|---|-------------------------|
| <u>7.1</u>                        | <u>Mixer Can</u>             | <u>Ambient</u>                         | <u>Atmospheric</u>                        | <u>Stainless Steel</u>  |
|                                   | <u>Balance</u>               | <u>Ambient</u>                         | <u>Atmospheric</u>                        | <u>Iron/Steel</u>       |
| <u>7.2</u>                        | <u>Mixer Can</u>             | <u>Ambient</u>                         | <u>Atmospheric</u>                        | <u>Stainless Steel</u>  |
|                                   | <u>Mixer</u>                 | <u>Ambient</u>                         | <u>Atmospheric</u>                        | <u>Stainless Steel</u>  |
|                                   | <u>Hood</u>                  | <u>Ambient</u>                         | <u>Atmospheric</u>                        | <u>Galvanized Steel</u> |
| <u>7.3</u>                        | <u>Filler Container</u>      | <u>Ambient</u>                         | <u>Atmospheric</u>                        | <u>Galvanized Tin</u>   |
| <u>7.4</u>                        | <u>Oven</u>                  | <u>125°C</u>                           | <u>Atmospheric</u>                        | <u>Galvanized Metal</u> |
| <u>7.5</u>                        | <u>Balance</u>               | <u>Ambient</u>                         | <u>Atmospheric</u>                        | <u>Iron/Steel</u>       |
| <u>7.6</u>                        | <u>Mixer Can</u>             | <u>Ambient</u>                         | <u>Atmospheric</u>                        | <u>Stainless Steel</u>  |
|                                   | <u>Balance</u>               | <u>Ambient</u>                         | <u>Atmospheric</u>                        | <u>Iron/Steel</u>       |

☒ Mark (X) this box if you attach a continuation sheet.

7.04 Describe the typical equipment types for each unit operation identified in your process block flow diagram(s). If a process block flow diagram is provided for more than one process type, photocopy this question and complete it separately for each process type.

CBI

☐ Process type ..... Adhesive Formulation

| Unit<br>Operation<br>ID<br>Number | Typical<br>Equipment<br>Type | Operating<br>Temperature<br>Range (°C) | Operating<br>Pressure<br>Range<br>(mm Hg) | Vessel<br>Composition          |
|-----------------------------------|------------------------------|--|---|--------------------------------|
| <u>7.7</u>                        | <u>Blender</u>               | <u>Ambient</u>                         | <u>Atmospheric</u>                        | <u>Stainless Steel/Plastic</u> |
| <u>7.8</u>                        | <u>Mixer Can</u>             | <u>Ambient</u>                         | <u>Atmospheric</u>                        | <u>Stainless Steel</u>         |
|                                   | <u>Mixer</u>                 | <u>Ambient</u>                         | <u>Atmospheric</u>                        | <u>Stainless Steel</u>         |
|                                   | <u>Hood</u>                  | <u>Ambient</u>                         | <u>Atmospheric</u>                        | <u>Galvanized Steel</u>        |
| <u>7.9</u>                        | <u>Pint Container</u>        | <u>Ambient</u>                         | <u>Atmospheric</u>                        | <u>Tin</u>                     |
| <u>7.10</u>                       | <u>Quart Container</u>       | <u>Ambient</u>                         | <u>Atmospheric</u>                        | <u>Tin</u>                     |
| <u>7.11</u>                       | <u>Pint/Quart Container</u>  | <u>Ambient</u>                         | <u>Atmospheric</u>                        | <u>Polyethylene</u>            |
|                                   | <u>Tongue Depressor</u>      | <u>Ambient</u>                         | <u>Atmospheric</u>                        | <u>Wood</u>                    |
| <u>7.12</u>                       | <u>Vacuum Chamber</u>        | <u>Ambient</u>                         | <u>0-.5</u>                               | <u>Steel/Glass</u>             |
| <u>7.13</u>                       | <u>Syringes</u>              | <u>Ambient</u>                         | <u>Atmospheric</u>                        | <u>Plastic</u>                 |

☒ Mark (X) this box if you attach a continuation sheet.

7.04 Describe the typical equipment types for each unit operation identified in your process block flow diagram(s). If a process block flow diagram is provided for more than one process type, photocopy this question and complete it separately for each process type.

CBI

☐ Process type ..... Adhesive Formulation

| Unit<br>Operation<br>ID<br>Number | Typical<br>Equipment<br>Type | Operating<br>Temperature<br>Range (°C) | Operating<br>Pressure<br>Range<br>(mm Hg) | Vessel<br>Compositi         |
|-----------------------------------|------------------------------|--|---|-----------------------------|
| <u>7.14</u>                       | <u>Molds</u>                 | <u>Ambient</u>                         | <u>Atmospheric</u>                        | <u>Aluminum</u>             |
| <u>7.15</u>                       | <u>Oven</u>                  | <u>62.5°C</u>                          | <u>Atmospheric</u>                        | <u>Galvanized<br/>Metal</u> |
| <u>7.16</u>                       | <u>Weighing Dishes</u>       | <u>Ambient</u>                         | <u>Atmospheric</u>                        | <u>Aluminum</u>             |
| <u>7.17</u>                       | <u>Oven</u>                  | <u>62.5°C</u>                          | <u>Atmospheric</u>                        | <u>Galvanized<br/>Metal</u> |
| _____                             | _____                        | _____                                  | _____                                     | _____                       |
| _____                             | _____                        | _____                                  | _____                                     | _____                       |
| _____                             | _____                        | _____                                  | _____                                     | _____                       |
| _____                             | _____                        | _____                                  | _____                                     | _____                       |
| _____                             | _____                        | _____                                  | _____                                     | _____                       |
| _____                             | _____                        | _____                                  | _____                                     | _____                       |
| _____                             | _____                        | _____                                  | _____                                     | _____                       |

☐ Mark (X) this box if you attach a continuation sheet.



7.05 Describe each process stream identified in your process block flow diagram(s). If a process block flow diagram is provided for more than one process type, photocopy this question and complete it separately for each process type.

CBI

☐ Process type ..... Adhesive Formulation

| Process Stream ID Code | Process Stream Description | Physical State <sup>1</sup> | Stream Flow (kg/yr) |
|------------------------|----------------------------|-----------------------------|---------------------|
| <u>7A</u>              | <u>Solithane 113</u>       | <u>OL</u>                   | <u>81.0</u>         |
| <u>7B</u>              | <u>Cab-o-sil</u>           | <u>SO</u>                   | <u>4.72</u>         |
| <u>7C</u>              | <u>Cab-o-sil</u>           | <u>SO</u>                   | <u>4.72</u>         |
| <u>7D</u>              | <u>Cab-o-sil</u>           | <u>SO</u>                   | <u>4.72</u>         |
| <u>7E</u>              | <u>Cab-o-sil</u>           | <u>SO</u>                   | <u>4.72</u>         |
| <u>7F</u>              | <u>Part A</u>              | <u>OL</u>                   | <u>85.72</u>        |
| <u>7G</u>              | <u>Part A Vapors</u>       | <u>GU</u>                   | <u>UK</u>           |
| <u>7H</u>              | <u>Part A Residuals</u>    | <u>OL</u>                   | <u>UK</u>           |

<sup>1</sup>Use the following codes to designate the physical state for each process stream:

GC = Gas (condensable at ambient temperature and pressure)  
 GU = Gas (uncondensable at ambient temperature and pressure)  
 SO = Solid  
 SY = Sludge or slurry  
 AL = Aqueous liquid  
 OL = Organic liquid  
 IL = Immiscible liquid (specify phases, e.g., 90% water, 10% toluene)

☒ Mark (X) this box if you attach a continuation sheet.

7.05 Describe each process stream identified in your process block flow diagram(s). If a process block flow diagram is provided for more than one process type, photocopy this question and complete it separately for each process type.

CBI

☐ Process type ..... Adhesive Formulation

| Process<br>Stream<br>ID<br>Code | Process Stream<br>Description | Physical State <sup>1</sup> | Stream<br>Flow (kg/yr) |
|---------------------------------|-------------------------------|-----------------------------|------------------------|
| <u>7I</u>                       | <u>Catalyst 113-300</u>       | <u>OL</u>                   | <u>63.297</u>          |
| <u>7J</u>                       | <u>Catalyst 113-300</u>       | <u>OL</u>                   | <u>2.808</u>           |
| <u>7K</u>                       | <u>Calcoflor White</u>        | <u>SO</u>                   | <u>.1755</u>           |
| <u>7L</u>                       | <u>Dye</u>                    | <u>OL</u>                   | <u>.351</u>            |
| <u>7M</u>                       | <u>Mixture of 7J, 7K, 7L</u>  | <u>OL</u>                   | <u>.5985</u>           |
| <u>7N</u>                       | <u>Cab-o-sil</u>              | <u>SO</u>                   | <u>8.623</u>           |
| <u>7O</u>                       | <u>Mixer Vapors</u>           | <u>GU</u>                   | <u>UK</u>              |
| <u>7P</u>                       | <u>Mixer Residual</u>         | <u>OL</u>                   | <u>UK</u>              |

<sup>1</sup> Use the following codes to designate the physical state for each process stream:

- GC = Gas (condensable at ambient temperature and pressure)
- GU = Gas (uncondensable at ambient temperature and pressure)
- SO = Solid
- SY = Sludge or slurry
- AL = Aqueous liquid
- OL = Organic liquid
- IL = Immiscible liquid (specify phases, e.g., 90% water, 10% toluene)

☒ Mark (X) this box if you attach a continuation sheet.

7.05 Describe each process stream identified in your process block flow diagram(s). If a process block flow diagram is provided for more than one process type, photocopy this question and complete it separately for each process type.

CBI

☐ Process type ..... Adhesive Formulation

| Process Stream ID Code | Process Stream Description | Physical State <sup>1</sup> | Stream Flow (kg/yr) |
|------------------------|----------------------------|-----------------------------|---------------------|
| <u>7Q</u>              | <u>Thermolite T-12</u>     | <u>OL</u>                   | <u>.06318</u>       |
| <u>7R</u>              | <u>Metasol TK-100</u>      | <u>SO</u>                   | <u>.14625</u>       |
| <u>7S</u>              | <u>Mixer Vapors</u>        | <u>GU</u>                   | <u>UK</u>           |
| <u>7T</u>              | <u>Mixer Residual</u>      | <u>OL</u>                   | <u>UK</u>           |
| <u>7U</u>              | <u>Part B</u>              | <u>OL</u>                   | <u>75.464</u>       |
| <u>7V</u>              | <u>Part B</u>              | <u>OL</u>                   | <u>75.464</u>       |
| <u>7W</u>              | <u>Part A</u>              | <u>OL</u>                   | <u>85.72</u>        |
| <u>7X</u>              | <u>Mix Vapors</u>          | <u>GU</u>                   | <u>UK</u>           |

<sup>1</sup>Use the following codes to designate the physical state for each process stream:

- GC = Gas (condensable at ambient temperature and pressure)
- GU = Gas (uncondensable at ambient temperature and pressure)
- SO = Solid
- SY = Sludge or slurry
- AL = Aqueous liquid
- OL = Organic liquid
- IL = Immiscible liquid (specify phases, e.g., 90% water, 10% toluene)

☒ Mark (X) this box if you attach a continuation sheet.

7.05 Describe each process stream identified in your process block flow diagram(s). If a process block flow diagram is provided for more than one process type, photocopy this question and complete it separately for each process type.

CBI

☐ Process type ..... Adhesive Formulation

| Process Stream ID Code | Process Stream Description          | Physical State <sup>1</sup> | Stream Flow (kg/yr) |
|------------------------|-------------------------------------|-----------------------------|---------------------|
| <u>7Y</u>              | <u>Spent Container</u>              | <u>SO</u>                   | <u>UK</u>           |
| <u>7Z</u>              | <u>Thixotropic Staking Compound</u> | <u>OL</u>                   | <u>126.692</u>      |
| <u>7AA</u>             | <u>Thixotropic Staking Compound</u> | <u>OL</u>                   | <u>126.692</u>      |
| <u>7BB</u>             | <u>Thixotropic Staking Compound</u> | <u>OL</u>                   | <u>126.692</u>      |
| <u>7CC</u>             | <u>Spent Syringe</u>                | <u>SO</u>                   | <u>UK</u>           |
| <u>7DD</u>             | <u>Thixotropic Staking Compound</u> | <u>OL</u>                   | <u>2.40</u>         |
| <u>7EE</u>             | <u>Thixotropic Staking Compound</u> | <u>OL</u>                   | <u>2.40</u>         |
| <u>7FF</u>             | <u>Thixotropic Staking Compound</u> | <u>SO</u>                   | <u>2.40</u>         |

<sup>1</sup>Use the following codes to designate the physical state for each process stream:

- GC = Gas (condensable at ambient temperature and pressure)
- GU = Gas (uncondensable at ambient temperature and pressure)
- SO = Solid
- SY = Sludge or slurry
- AL = Aqueous liquid
- OL = Organic liquid
- IL = Immiscible liquid (specify phases, e.g., 90% water, 10% toluene)

☒ Mark (X) this box if you attach a continuation sheet.

7.05 Describe each process stream identified in your process block flow diagram(s). If a process block flow diagram is provided for more than one process type, photocopy this question and complete it separately for each process type.

CBI

☐ Process type ..... Adhesive Formulation

| Process<br>Stream<br>ID<br>Code | Process Stream<br>Description       | Physical State <sup>1</sup> | Stream<br>Flow (kg/yr) |
|---------------------------------|-------------------------------------|-----------------------------|------------------------|
| <u>TGG</u>                      | <u>Thixotropic Staking Compound</u> | <u>OL</u>                   | <u>5.64</u>            |
| <u>7HH</u>                      | <u>Thixotropic Staking Compound</u> | <u>OL</u>                   | <u>5.64</u>            |
| <u>7II</u>                      | <u>Thixotropic Staking Compound</u> | <u>SO</u>                   | <u>5.64</u>            |
| _____                           | _____                               | _____                       | _____                  |
| _____                           | _____                               | _____                       | _____                  |
| _____                           | _____                               | _____                       | _____                  |
| _____                           | _____                               | _____                       | _____                  |
| _____                           | _____                               | _____                       | _____                  |

Use the following codes to designate the physical state for each process stream:

- GC = Gas (condensable at ambient temperature and pressure)
- GU = Gas (uncondensable at ambient temperature and pressure)
- SO = Solid
- SY = Sludge or slurry
- AL = Aqueous liquid
- OL = Organic liquid
- IL = Immiscible liquid (specify phases, e.g., 90% water, 10% toluene)

☐ Mark (X) this box if you attach a continuation sheet.

7.06 Characterize each process stream identified in your process block flow diagram(s). If a process block flow diagram is provided for more than one process type, photocopy this question and complete it separately for each process type. (Refer to the CBI instructions for further explanation and an example.)

☐ Process type ..... Adhesive Formulation

| a.<br>Process<br>Stream<br>ID Code | b.<br>Known Compounds <sup>1</sup> | c.<br>Concen-<br>trations <sup>2,3</sup><br>(% or ppm) | d.<br>Other<br>Expected<br>Compounds | e.<br>Estimated<br>Concentrations<br>(% or ppm) |
|------------------------------------|------------------------------------|--|--------------------------------------|---|
| <u>7A</u>                          | <u>2,4-Toluene Diisocyanate</u>    | <u>6.3 % (A)(W)</u>                                    | <u>UK</u>                            | <u>UK</u>                                       |
| <u>7B</u>                          | <u>Silicon Dioxide</u>             | <u>99+ % (A)(W)</u>                                    | <u>UK</u>                            | <u>UK</u>                                       |
| <u>7C</u>                          | <u>Silicon Dioxide</u>             | <u>99+ % (A)(W)</u>                                    | <u>UK</u>                            | <u>UK</u>                                       |
| <u>7D</u>                          | <u>Silicon Dioxide</u>             | <u>99+ % (A)(W)</u>                                    | <u>UK</u>                            | <u>UK</u>                                       |
| <u>7E</u>                          | <u>Silicon Dioxide</u>             | <u>99+ % (A)(W)</u>                                    | <u>UK</u>                            | <u>UK</u>                                       |
| <u>7F</u>                          | <u>2,4-Toluene Diisocyanate</u>    | <u>5.95 % (E)(W)</u>                                   | <u>UK</u>                            | <u>UK</u>                                       |
|                                    | <u>Silicon Dioxide</u>             | <u>5.51 % (E)(W)</u>                                   | <u>UK</u>                            | <u>UK</u>                                       |
| <u>7G</u>                          | <u>2,4-Toluene Diisocyanate</u>    | <u>UK</u>  | <u>UK</u>                            | <u>UK</u>                                       |
| <u>7H</u>                          | <u>2,4-Toluene Diisocyanate</u>    | <u>5.95 % (E)(W)</u>                                   | <u>UK</u>                            | <u>UK</u>                                       |
|                                    | <u>Silicon Dioxide</u>             | <u>5.51 % (E)(W)</u>                                   | <u>UK</u>                            | <u>UK</u>                                       |
| <u>7I</u>                          | <u>Ricinus Oil</u>                 | <u>UK</u>  | <u>UK</u>                            | <u>UK</u>                                       |
| <u>7J</u>                          | <u>Ricinus Oil</u>                 | <u>UK</u>  | <u>UK</u>                            | <u>UK</u>                                       |

7.06 continued below

☒ Mark (X) this box if you attach a continuation sheet.

7.06 Characterize each process stream identified in your process block flow diagram(s). If a process block flow diagram is provided for more than one process type, photocopy this question and complete it separately for each process type. (Refer to the CBI instructions for further explanation and an example.)

☐ Process type ..... Adhesive Formulation

| a.<br>Process<br>Stream<br>ID Code | b.<br><u>Known Compounds<sup>1</sup></u> | c.<br>Concen-<br>trations <sup>2,3</sup><br>(% or ppm) | d.<br>Other<br>Expected<br>Compounds | e.<br>Estimated<br>Concentrations<br>(% or ppm) |
|------------------------------------|--|--|--------------------------------------|---|
| <u>7K</u>                          | <u>UK</u>                                | <u>UK</u>  | <u>UK</u>                            | <u>UK</u>                                       |
| <u>7L</u>                          | <u>Epichlorohydrin (ECH)</u>             | <u>Trace</u>   | <u>UK</u>                            | <u>UK</u>                                       |
| <u>7M</u>                          | <u>Ricinus Oil</u>                       | <u>UK</u>  | <u>UK</u>                            | <u>UK</u>                                       |
|                                    | <u>Epichlorohydrin</u>                   | <u>Trace</u>   | <u>UK</u>                            | <u>UK</u>                                       |
| <u>7N</u>                          | <u>Silicon Dioxide</u>                   | <u>99+90 (A)(W)</u>                                    | <u>UK</u>                            | <u>UK</u>                                       |
| <u>7O</u>                          | <u>UK</u>                                | <u>UK</u>  | <u>UK</u>                            | <u>UK</u>                                       |
| <u>7P</u>                          | <u>Ricinus Oil</u>                       | <u>UK</u>  | <u>UK</u>                            | <u>UK</u>                                       |
|                                    | <u>Epichlorohydrin</u>                   | <u>Trace</u>   | <u>UK</u>                            | <u>UK</u>                                       |
| <u>7Q</u>                          | <u>Dibutyltin Dilaurate</u>              | <u>&gt;95% (A)(W)</u>                                  | <u>UK</u>                            | <u>UK</u>                                       |
| <u>7R</u>                          | <u>2-(4-thiazoly)benzimidazole</u>       | <u>98.5% (A)(W)</u>                                    | <u>UK</u>                            | <u>UK</u>                                       |
| <u>7S</u>                          | <u>UK</u>                                | <u>UK</u>  | <u>UK</u>                            | <u>UK</u>                                       |
| <u>7T</u>                          | <u>Ricinus Oil</u>                       | <u>UK</u>  | <u>UK</u>                            | <u>UK</u>                                       |
|                                    | <u>Epichlorohydrin</u>                   | <u>Trace</u>   | <u>UK</u>                            | <u>UK</u>                                       |
|                                    | <u>Dibutyltin Dilaurate</u>              | <u>.08% (E)(W)</u>                                     | <u>UK</u>                            | <u>UK</u>                                       |
|                                    | <u>2-(4-thiazoly)benzimidazole</u>       | <u>.19% (E)(W)</u>                                     | <u>UK</u>                            | <u>UK</u>                                       |

7.06 continued below

☒ Mark (X) this box if you attach a continuation sheet.

7.06 Characterize each process stream identified in your process block flow diagram(s). If a process block flow diagram is provided for more than one process type, photocopy this question and complete it separately for each process type. (Refer to the CBI instructions for further explanation and an example.)

☐ Process type ..... Adhesive Formulation

| a.<br>Process<br>Stream<br>ID Code | b.<br>Known Compounds <sup>1</sup> | c.<br>Concen-<br>trations <sup>2,3</sup><br>(% or ppm) | d.<br>Other<br>Expected<br>Compounds | e.<br>Estimated<br>Concentrations<br>(% or ppm) |
|------------------------------------|------------------------------------|--|--------------------------------------|---|
| <u>7U, 7V</u>                      | <u>Ricinus Oil</u>                 | <u>UK</u>  | <u>UK</u>                            | <u>UK</u>                                       |
|                                    | <u>Dibutyltin Dilaurate</u>        | <u>.08% (E)(W)</u>                                     | <u>UK</u>                            | <u>UK</u>                                       |
|                                    | <u>Epichlorohydrin</u>             | <u>Trace</u>   | <u>UK</u>                            | <u>UK</u>                                       |
|                                    | <u>2-(4-thiazoly)benzimidazole</u> | <u>.19% (E)(W)</u>                                     | <u>UK</u>                            | <u>UK</u>                                       |
| <u>7W</u>                          | <u>2,4-Toluene Diisocyanate</u>    | <u>5.95% (E)(W)</u>                                    | <u>UK</u>                            | <u>UK</u>                                       |
|                                    | <u>Silicon Dioxide</u>             | <u>5.51% (E)(W)</u>                                    | <u>UK</u>                            | <u>UK</u>                                       |
| <u>7X</u>                          | <u>2,4-Toluene Diisocyanate</u>    | <u>UK</u>  | <u>UK</u>                            | <u>UK</u>                                       |
| <u>7Y, 7Z</u>                      | <u>2,4-Toluene Diisocyanate</u>    | <u>3.71% (E)(W)</u>                                    | <u>UK</u>                            | <u>UK</u>                                       |
| <u>7AA, 7BB,</u>                   | <u>Silicon Dioxide</u>             | <u>7.74% (E)(W)</u>                                    | <u>UK</u>                            | <u>UK</u>                                       |
| <u>7CC, 7DD,</u>                   | <u>Dibutyltin Dilaurate</u>        | <u>0.03% (E)(W)</u>                                    | <u>UK</u>                            | <u>UK</u>                                       |
| <u>7EE, 7FF,</u>                   | <u>2-(4-thiazoly)benzimidazole</u> | <u>0.07% (E)(W)</u>                                    | <u>UK</u>                            | <u>UK</u>                                       |
| <u>7GG, 7HH,</u>                   | <u>Ricinus Oil</u>                 | <u>UK</u>  | <u>UK</u>                            | <u>UK</u>                                       |
| <u>7II</u>                         | <u>Epichlorohydrin</u>             | <u>Trace</u>   | <u>UK</u>                            | <u>UK</u>                                       |

7.06 continued below

☐ Mark (X) this box if you attach a continuation sheet.



<sup>1</sup>For each additive package introduced into a process stream, specify the compounds that are present in each additive package, and the concentration of each component. Assign an additive package number to each additive package and list this number in column b. (Refer to the instructions for further explanation and an example. Refer to the glossary for the definition of additive package.)

| Additive<br>Package Number | Components of<br>Additive Package | Concentrations<br>(% or ppm) |
|----------------------------|-----------------------------------|------------------------------|
| 1                          |                                   |                              |
| 2                          |                                   |                              |
| 3                          |                                   |                              |
| 4                          |                                   |                              |
| 5                          |                                   |                              |

<sup>2</sup>Use the following codes to designate how the concentration was determined:

- A = Analytical result
- E = Engineering judgement/calculation

<sup>3</sup>Use the following codes to designate how the concentration was measured:

- V = Volume
- W = Weight

☐ Mark (X) this box if you attach a continuation sheet.

PART A RESIDUAL TREATMENT PROCESS DESCRIPTION

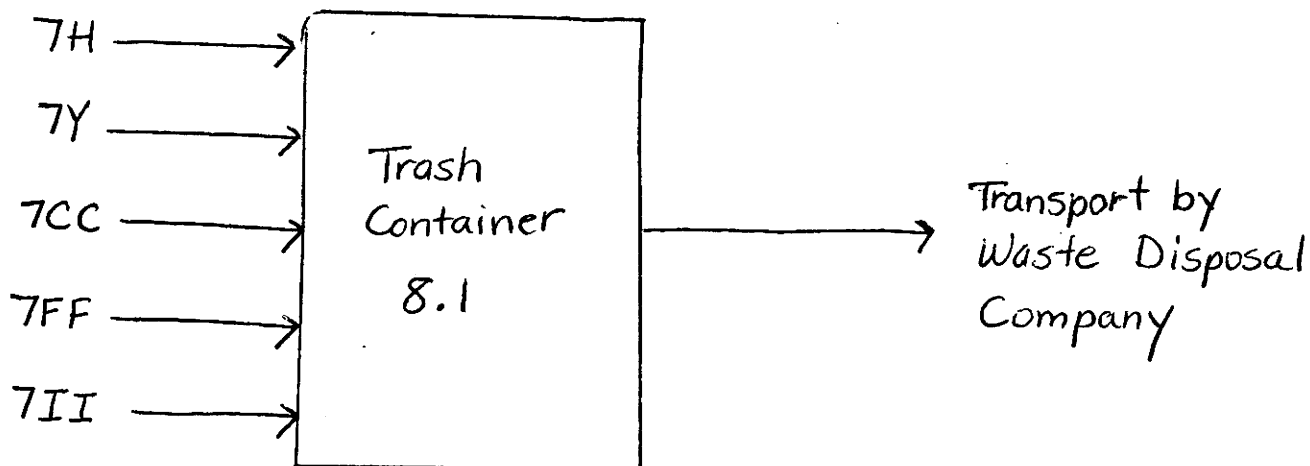
8.01 In accordance with the instructions, provide a residual treatment block flow diagram which describes the treatment process used for residuals identified in question 7.01

CE:

☐

Process type .....

Adhesive Formulation



☐

Mark (X) this box if you attach a continuation sheet.

# PART B RESIDUAL GENERATION AND CHARACTERIZATION

8.05 Characterize each process stream identified in your residual treatment block flow diagram(s). If a residual treatment block flow diagram is provided for more than one process type, photocopy this question and complete it separately for each process type. (Refer to the instructions for further explanation and an example.)

☐ Process type ..... Adhesive Formulation

| a.                           | b.                                   | c.                                      | d.                                   | e.   | f.                       | g.                                  |
|------------------------------|--------------------------------------|---|--------------------------------------|--|--------------------------|-------------------------------------|
| Stream ID Code               | Type of Hazardous Waste <sup>1</sup> | Physical State of Residual <sup>2</sup> | Known Compounds <sup>3</sup>         | Concentrations (% or ppm) <sup>4,5,6</sup> | Other Expected Compounds | Estimated Concentrations (% or ppm) |
| <u>7H</u>                    | <u>NA</u>                            | <u>OL</u>                               | <u>2,4-TDI</u>                       | <u>5.96% (E)(W)</u>                        | <u>UK</u>                | <u>UK</u>                           |
|                              |                                      |   | <u>SiO<sub>2</sub></u>               | <u>5.51% (E)(W)</u>                        | <u>UK</u>                | <u>UK</u>                           |
| <u>7Y</u>                    | <u>NA</u>                            | <u>OL</u>                               | <u>2,4-TDI</u>                       | <u>3.71% (E)(W)</u>                        | <u>UK</u>                | <u>UK</u>                           |
|                              |                                      |   | <u>SiO<sub>2</sub></u>               | <u>7.74% (E)(W)</u>                        | <u>UK</u>                | <u>UK</u>                           |
|                              |                                      |   | <u>Dibutyltin Dilaurate</u>          | <u>0.03% (E)(W)</u>                        | <u>UK</u>                | <u>UK</u>                           |
|                              |                                      |   | <u>2-(4-thiazolyl) benzimidazole</u> | <u>0.07% (E)(W)</u>                        | <u>UK</u>                | <u>UK</u>                           |
|                              |                                      |   | <u>Ricinus Oil</u>                   | <u>UK</u>                                  | <u>UK</u>                | <u>UK</u>                           |
|                              |                                      |   | <u>Epichlorohydrin</u>               | <u>Trace</u>                               | <u>UK</u>                | <u>UK</u>                           |
| <u>7CC,<br/>7FF,<br/>7II</u> | <u>NA</u>                            | <u>SO</u>                               | <u>2,4-TDI</u>                       | <u>3.71% (E)(W)</u>                        | <u>UK</u>                | <u>UK</u>                           |
|                              |                                      |   | <u>SiO<sub>2</sub></u>               | <u>7.74% (E)(W)</u>                        | <u>UK</u>                | <u>UK</u>                           |
|                              |                                      |   | <u>Dibutyltin Dilaurate</u>          | <u>0.03% (E)(W)</u>                        | <u>UK</u>                | <u>UK</u>                           |
|                              |                                      |   | <u>2-(4-thiazolyl) benzimidazole</u> | <u>0.07% (E)(W)</u>                        | <u>UK</u>                | <u>UK</u>                           |
|                              |                                      |   | <u>Ricinus Oil</u>                   | <u>UK</u>                                  | <u>UK</u>                | <u>UK</u>                           |
|                              |                                      |   | <u>Epichlorohydrin</u>               | <u>Trace</u>                               | <u>UK</u>                | <u>UK</u>                           |
|                              |                                      |   |                                      |  |                          |                                     |
|                              |                                      |   |                                      |  |                          |                                     |

8.05 continued below

☐ Mark (X) this box if you attach a continuation sheet.

8.05 (continued)

<sup>1</sup>Use the following codes to designate the type of hazardous waste:

I = Ignitable  
C = Corrosive  
R = Reactive  
E = EP toxic  
T = Toxic  
H = Acutely hazardous

<sup>2</sup>Use the following codes to designate the physical state of the residual:

GC = Gas (condensable at ambient temperature and pressure)  
GU = Gas (uncondensable at ambient temperature and pressure)  
SO = Solid  
SY = Sludge or slurry  
AL = Aqueous liquid  
OL = Organic liquid  
IL = Immiscible liquid (specify phases, e.g., 90% water, 10% toluene)

-----

8.05 continued below

---

☐ Mark (X) this box if you attach a continuation sheet.

---

8.05 (continued)

<sup>3</sup>For each additive package introduced into a process stream, specify the compounds that are present in each additive package, and the concentration of each component. Assign an additive package number to each additive package and list this number in column d. (Refer to the instructions for further explanation and an example. Refer to the glossary for the definition of additive package.)

| Additive<br>Package Number | Components of<br>Additive Package | Concentrations<br>(% or ppm) |
|----------------------------|-----------------------------------|------------------------------|
| 1                          |                                   |                              |
| 2                          |                                   |                              |
| 3                          |                                   |                              |
| 4                          |                                   |                              |
| 5                          |                                   |                              |

<sup>4</sup>Use the following codes to designate how the concentration was determined:

A = Analytical result

E = Engineering judgement/calculation

8.05 continued below

☐ Mark (X) this box if you attach a continuation sheet.

<sup>5</sup>Use the following codes to designate how the concentration was measured:

V = Volume

W = Weight

<sup>6</sup>Specify the analytical test methods used and their detection limits in the table below. Assign a code to each test method used and list those codes in column e.

NA

| <u>Code</u> | <u>Method</u> | <u>Detection Lim.</u><br><u>(<math>\pm</math> ug/l)</u> |
|-------------|---------------|---|
| <u>1</u>    |               |   |
| <u>2</u>    |               |   |
| <u>3</u>    |               |   |
| <u>4</u>    |               |   |
| <u>5</u>    |               |   |
| <u>6</u>    |               |   |

☐ Mark (X) this box if you attach a continuation sheet.

8.06 Characterize each process stream identified in your residual treatment block flow diagram(s). If a residual treatment block flow diagram is provided for more than one process type, photocopy this question and complete it separately for each process type. (Refer to the instructions for further explanation and an example.)

CBI

☐ Process type ..... Adhesive Formulation

| a.             | b.                     | c.                     | d.                          | e.                         |             | f.                                     | g.                            |
|----------------|------------------------|------------------------|-----------------------------|----------------------------|-------------|--|-------------------------------|
| Stream ID Code | Waste Description Code | Management Method Code | Residual Quantities (kg/yr) | Management of Residual (%) |             | Costs for Off-Site Management (per kg) | Changes in Management Methods |
|                |                        |                        |                             | On-Site                    | Off-Site    |  |                               |
| <u>7H</u>      | <u>B67</u>             | <u>1D</u>              | <u>UK</u>                   |                            | <u>100%</u> | <u>UK</u>                              | <u>111 (7/90)</u>             |
| <u>7Y</u>      | <u>B67, B85</u>        | <u>1D</u>              | <u>UK</u>                   |                            | <u>100%</u> | <u>UK</u>                              | <u>111 (7/90)</u>             |
| <u>7CC</u>     | <u>B82, B85</u>        | <u>1D</u>              | <u>UK</u>                   |                            | <u>100%</u> | <u>UK</u>                              | <u>111 (7/90)</u>             |
| <u>7FF</u>     | <u>B82</u>             | <u>1D</u>              | <u>2.40</u>                 |                            | <u>100%</u> | <u>UK</u>                              | <u>111 (7/90)</u>             |
| <u>7II</u>     | <u>B82</u>             | <u>1D</u>              | <u>5.64</u>                 |                            | <u>100%</u> | <u>UK</u>                              | <u>111 (7/90)</u>             |
|                |                        |                        |                             |                            |             |  |                               |
|                |                        |                        |                             |                            |             |  |                               |
|                |                        |                        |                             |                            |             |  |                               |
|                |                        |                        |                             |                            |             |  |                               |
|                |                        |                        |                             |                            |             |  |                               |
|                |                        |                        |                             |                            |             |  |                               |
|                |                        |                        |                             |                            |             |  |                               |
|                |                        |                        |                             |                            |             |  |                               |
|                |                        |                        |                             |                            |             |  |                               |
|                |                        |                        |                             |                            |             |  |                               |
|                |                        |                        |                             |                            |             |  |                               |
|                |                        |                        |                             |                            |             |  |                               |
|                |                        |                        |                             |                            |             |  |                               |
|                |                        |                        |                             |                            |             |  |                               |
|                |                        |                        |                             |                            |             |  |                               |
|                |                        |                        |                             |                            |             |  |                               |

<sup>1</sup>Use the codes provided in Exhibit 8-1 to designate the waste descriptions

<sup>2</sup>Use the codes provided in Exhibit 8-2 to designate the management methods

☐ Mark (X) this box if you attach a continuation sheet.

8.22 Describe the combustion chamber design parameters for each of the three largest (by capacity) incinerators that are used on-site to burn the residuals identified in your process block or residual treatment block flow diagram(s).

☐

| Incinerator | Combustion Chamber Temperature (°C) |           | Location of Temperature Monitor |           | Residence Time In Combustion Chamber (seconds) |           |
|-------------|-------------------------------------|-----------|---------------------------------|-----------|--|-----------|
|             | Primary                             | Secondary | Primary                         | Secondary | Primary  | Secondary |
| 1           |                                     |           |                                 |           |  |           |
| 2           |                                     |           |                                 |           |  |           |
| 3           |                                     |           |                                 |           |  |           |

Indicate if Office of Solid Waste survey has been submitted in lieu of response by circling the appropriate response.

Yes ..... 1

No ..... 2

8.23 Complete the following table for the three largest (by capacity) incinerators that are used on-site to burn the residuals identified in your process block or residual treatment block flow diagram(s).

CBI

☐

| Incinerator | Air Pollution Control Device <sup>1</sup> | Types of Emissions Data Available |
|-------------|---|-----------------------------------|
| 1           |   |                                   |
| 2           |   |                                   |
| 3           |   |                                   |

Indicate if Office of Solid Waste survey has been submitted in lieu of response by circling the appropriate response.

Yes ..... 1

No ..... 2

<sup>1</sup>Use the following codes to designate the air pollution control device:

S = Scrubber (include type of scrubber in parenthesis)

E = Electrostatic precipitator

O = Other (specify) \_\_\_\_\_

☐ Mark (X) this box if you attach a continuation sheet.



# PART A EMPLOYMENT AND POTENTIAL EXPOSURE PROFILE

9.01 Mark (X) the appropriate column to indicate whether your company maintains records of the following data elements for hourly and salaried workers. Specify for each data element the year in which you began maintaining records and the number of years the records for that data element are maintained. (Refer to the instructions for further explanation and an example.)

CBI

[ ]

| Data Element  | Data are Maintained for: |                  | Year in Which Data Collection Began | Number of Years Records Are Maintained |
|---|--------------------------|------------------|-------------------------------------|--|
|   | Hourly Workers           | Salaried Workers |                                     |  |
| Date of hire  | X                        | X                | 1958                                | 7                                      |
| Age at hire   | X                        | X                | 1958                                | 7                                      |
| Work history of individual before employment at your facility | X                        | X                | 1958                                | 7                                      |
| Sex   | X                        | X                | 1958                                | 7                                      |
| Race  | X                        | X                | 1958                                | 7                                      |
| Job titles  | X                        | X                | 1958                                | 7                                      |
| Start date for each job title                                 | X                        | X                | 1958                                | 7                                      |
| End date for each job title                                   | X                        | X                | 1958                                | 7                                      |
| Work area industrial hygiene monitoring data                  | X                        | X                | UK                                  | Permanently                            |
| Personal employee monitoring data                             | X                        | X                | UK                                  | Permanently                            |
| Employee medical history                                      |                          | X                | UK                                  | Permanently                            |
| Employee smoking history                                      |                          |                  | NA                                  | NA                                     |
| Accident history  |                          | X                | UK                                  | 30 years                               |
| Retirement date   | X                        | X                | 1958                                | 7                                      |
| Termination date  | X                        | X                | 1958                                | 7                                      |
| Vital status of retirees                                      |                          |                  | NA                                  | NA                                     |
| Cause of death data   |                          | X                | UK                                  | 30 years                               |

[ ] Mark (X) this box if you attach a continuation sheet.

9.02 In accordance with the instructions, complete the following table for each activity in which you engage.

CBI

☐

| a.                                  | b.                      | c.                          | d.                   | e.                        |
|-------------------------------------|-------------------------|-----------------------------|----------------------|---------------------------|
| <u>Activity</u>                     | <u>Process Category</u> | <u>Yearly Quantity (kg)</u> | <u>Total Workers</u> | <u>Total Worker-Hours</u> |
| Manufacture of the listed substance | Enclosed                | NA                          |                      |                           |
|                                     | Controlled Release      | NA                          |                      |                           |
|                                     | Open                    | NA                          |                      |                           |
| On-site use as reactant             | Enclosed                | NA                          |                      |                           |
|                                     | Controlled Release      | NA                          |                      |                           |
|                                     | Open                    | NA                          |                      |                           |
| On-site use as nonreactant          | Enclosed                | NA                          |                      |                           |
|                                     | Controlled Release      | NA                          |                      |                           |
|                                     | Open                    | NA                          |                      |                           |
| On-site preparation of products     | Enclosed                | NA                          |                      |                           |
|                                     | Controlled Release      | 7.72                        | 10                   | 1517                      |
|                                     | Open                    | NA                          |                      |                           |

☐ Mark (X) this box if you attach a continuation sheet.

9.03 Provide a descriptive job title for each labor category at your facility that encompasses workers who may potentially come in contact with or be exposed to the listed substance.

CBI

☐

Labor Category

Descriptive Job Title

A

Member, Production Engineering Staff

B

Senior Precision Assembler

C

Assembly Technician

D

E

F

G

H

I

J

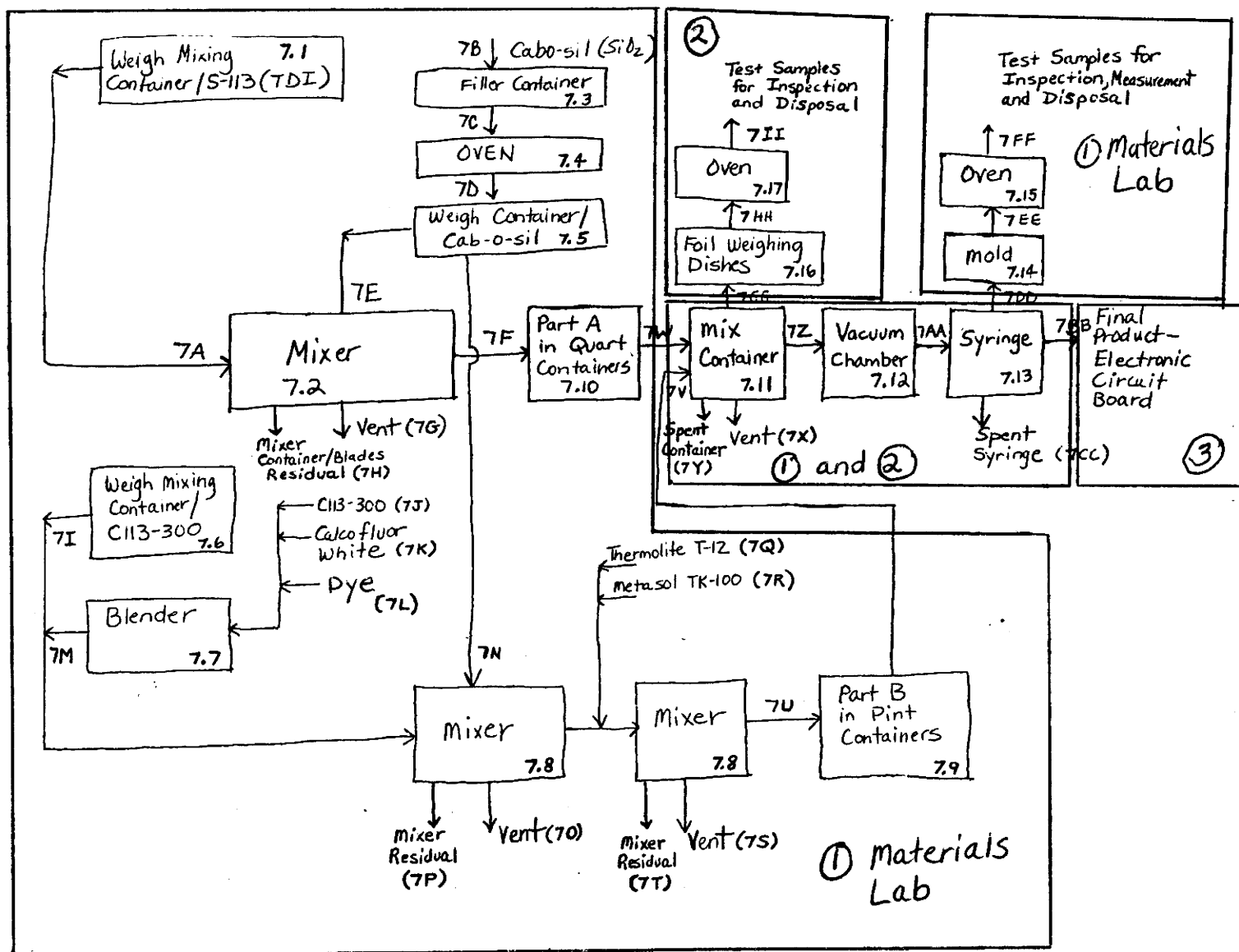
☐ Mark (X) this box if you attach a continuation sheet.

9.04 In accordance with the instructions, provide your process block flow diagram(s) and indicate associated work areas.

CBI

[ ] Process type ..... Adhesive Formulation

② Resin Application  
Lab  
(Potting Lab)



[ ] Mark (X) this box if you attach a continuation sheet.

9.05 Describe the various work area(s) shown in question 9.04 that encompass workers who may potentially come in contact with or be exposed to the listed substance. Add any additional areas not shown in the process block flow diagram in question 7.01 or 7.02. Photocopy this question and complete it separately for each process type.

CBI

☐ Process type ..... Adhesive Formulation

Work Area ID

Description of Work Areas and Worker Activities

|    |   |
|----|---|
| 1  | <u>Materials Lab (Formulate, Mix, Cure, Test)</u>       |
| 2  | <u>Resin Application Lab (Mix, Quick-Cure, Inspect,</u> |
| 3  | <u>Assembly Area (Application to Circuit Boards)</u>    |
| 4  | <u> </u>  |
| 5  | <u> </u>  |
| 6  | <u> </u>  |
| 7  | <u> </u>  |
| 8  | <u> </u>  |
| 9  | <u> </u>  |
| 10 | <u> </u>  |

☐ Mark (X) this box if you attach a continuation sheet.

9.06 Complete the following table for each work area identified in question 9.05, and for each labor category at your facility that encompasses workers who may potentially come in contact with or be exposed to the listed substance. Photocopy this question and complete it separately for each process type and work area.

☐ Process type ..... Adhesive Formulation

Work area ..... 1

| Labor Category | Number of Workers Exposed | Mode of Exposure (e.g., direct skin contact) | Physical State of Listed Substance <sup>1</sup> | Average Length of Exposure Per Day <sup>2</sup> | Number of Days per Year Exposed |
|----------------|---------------------------|--|---|---|---------------------------------|
| <u>A</u>       | <u>1</u>                  | <u>Inhalation, Direct Skin contact</u>       | <u>OL</u>                                       | <u>D</u>  | <u>39</u>                       |
|                |                           |  |   |   |                                 |
|                |                           |  |   |   |                                 |
|                |                           |  |   |   |                                 |
|                |                           |  |   |   |                                 |
|                |                           |  |   |   |                                 |
|                |                           |  |   |   |                                 |
|                |                           |  |   |   |                                 |
|                |                           |  |   |   |                                 |
|                |                           |  |   |   |                                 |
|                |                           |  |   |   |                                 |
|                |                           |  |   |   |                                 |
|                |                           |  |   |   |                                 |
|                |                           |  |   |   |                                 |
|                |                           |  |   |   |                                 |

<sup>1</sup>Use the following codes to designate the physical state of the listed substance at the point of exposure:

GC = Gas (condensable at ambient temperature and pressure)  
 GU = Gas (uncondensable at ambient temperature and pressure; includes fumes, vapors, etc.)  
 SO = Solid

SY = Sludge or slurry  
 AL = Aqueous liquid  
 OL = Organic liquid  
 IL = Immiscible liquid (specify phases, e.g., 90% water, 10% toluene)

<sup>2</sup>Use the following codes to designate average length of exposure per day:

A = 15 minutes or less  
 B = Greater than 15 minutes, but not exceeding 1 hour  
 C = Greater than one hour, but not exceeding 2 hours

D = Greater than 2 hours, but not exceeding 4 hours  
 E = Greater than 4 hours, but not exceeding 8 hours  
 F = Greater than 8 hours

☐ Mark (X) this box if you attach a continuation sheet.

- 9.06 Complete the following table for each work area identified in question 9.05, and for each labor category at your facility that encompasses workers who may potentially come in contact with or be exposed to the listed substance. Photocopy this question and complete it separately for each process type and work area.

☐ Process type ..... Adhesive Formulation

Work area ..... 2

| Labor Category | Number of Workers Exposed | Mode of Exposure (e.g., direct skin contact) | Physical State of Listed Substance <sup>1</sup> | Average Length of Exposure Per Day <sup>2</sup> | Number of Days per Year Exposed |
|----------------|---------------------------|--|---|---|---------------------------------|
| <u>B</u>       | <u>1</u>                  | <u>Inhalation, Direct Skin Contact</u>       | <u>OL</u>                                       | <u>C</u>  | <u>235</u>                      |
|                |                           |  |   |   |                                 |
|                |                           |  |   |   |                                 |
|                |                           |  |   |   |                                 |
|                |                           |  |   |   |                                 |
|                |                           |  |   |   |                                 |
|                |                           |  |   |   |                                 |
|                |                           |  |   |   |                                 |
|                |                           |  |   |   |                                 |
|                |                           |  |   |   |                                 |
|                |                           |  |   |   |                                 |

<sup>1</sup>Use the following codes to designate the physical state of the listed substance at the point of exposure:

|  |   |
|--|---|
| GC = Gas (condensable at ambient temperature and pressure)                                 | SY = Sludge or slurry   |
| GU = Gas (uncondensable at ambient temperature and pressure; includes fumes, vapors, etc.) | AL = Aqueous liquid   |
| SO = Solid   | OL = Organic liquid   |
|  | IL = Immiscible liquid (specify phases, e.g., 90% water, 10% toluene) |

<sup>2</sup>Use the following codes to designate average length of exposure per day:

|   |   |
|---|---|
| A = 15 minutes or less                                | D = Greater than 2 hours, but not exceeding 4 hours |
| B = Greater than 15 minutes, but not exceeding 1 hour | E = Greater than 4 hours, but not exceeding 8 hours |
| C = Greater than one hour, but not exceeding 2 hours  | F = Greater than 8 hours                            |

☐ Mark (X) this box if you attach a continuation sheet.

- 9.06 Complete the following table for each work area identified in question 9.05, and for each labor category at your facility that encompasses workers who may potentially come in contact with or be exposed to the listed substance. Photocopy this question and complete it separately for each process type and work area.

☐ Process type ..... Adhesive Formulation

Work area ..... 3

| Labor Category | Number of Workers Exposed | Mode of Exposure (e.g., direct skin contact) | Physical State of Listed Substance <sup>1</sup> | Average Length of Exposure Per Day <sup>2</sup> | Number Days per Year Exposed |
|----------------|---------------------------|--|---|---|------------------------------|
| <u>C</u>       | <u>8</u>                  | <u>inhalation</u>                            | <u>OL</u>                                       | <u>B</u>  | <u>252</u>                   |
|                |                           |  |   |   |                              |
|                |                           |  |   |   |                              |
|                |                           |  |   |   |                              |
|                |                           |  |   |   |                              |
|                |                           |  |   |   |                              |
|                |                           |  |   |   |                              |
|                |                           |  |   |   |                              |
|                |                           |  |   |   |                              |
|                |                           |  |   |   |                              |
|                |                           |  |   |   |                              |
|                |                           |  |   |   |                              |
|                |                           |  |   |   |                              |
|                |                           |  |   |   |                              |
|                |                           |  |   |   |                              |
|                |                           |  |   |   |                              |

<sup>1</sup>Use the following codes to designate the physical state of the listed substance at the point of exposure:

|  |   |
|--|---|
| GC = Gas (condensable at ambient temperature and pressure)                                 | SY = Sludge or slurry   |
| GU = Gas (uncondensable at ambient temperature and pressure; includes fumes, vapors, etc.) | AL = Aqueous liquid   |
| SO = Solid   | OL = Organic liquid   |
|  | IL = Immiscible liquid (specify phases, e.g., 90% water, 10% toluene) |

<sup>2</sup>Use the following codes to designate average length of exposure per day:

|   |   |
|---|---|
| A = 15 minutes or less                                | D = Greater than 2 hours, but not exceeding 4 hours |
| B = Greater than 15 minutes, but not exceeding 1 hour | E = Greater than 4 hours, but not exceeding 8 hours |
| C = Greater than one hour, but not exceeding 2 hours  | F = Greater than 8 hours                            |

☐ Mark (X) this box if you attach a continuation sheet.



9.07 For each labor category represented in question 9.06, indicate the 8-hour Time Weighted Average (TWA) exposure levels and the 15-minute peak exposure levels. Photocopy this question and complete it separately for each process type and work area.

CBI

☐ Process type ..... Adhesive Formulation

Work area ..... 1

| Labor Category | 8-hour TWA Exposure Level<br>(ppm, mg/m <sup>3</sup> , other-specify) | 15-Minute Peak Exposure Level<br>(ppm, mg/m <sup>3</sup> , other-specify) |
|----------------|---|---|
| <u>A</u>       | <u>&lt;.0044 ppm</u>  | <u>UK</u>   |
|                |   |   |
|                |   |   |
|                |   |   |
|                |   |   |
|                |   |   |
|                |   |   |
|                |   |   |
|                |   |   |
|                |   |   |
|                |   |   |
|                |   |   |
|                |   |   |
|                |   |   |
|                |   |   |
|                |   |   |

☐ Mark (X) this box if you attach a continuation sheet.

9.07 For each labor category represented in question 9.06, indicate the 8-hour Time Weighted Average (TWA) exposure levels and the 15-minute peak exposure levels. Photocopy this question and complete it separately for each process type and work area.

CBI

☐ Process type ..... Adhesive Formulation

Work area ..... 2

| Labor Category | 8-hour TWA Exposure Level<br>(ppm, mg/m <sup>3</sup> , other-specify) | 15-Minute Peak Exposure Level<br>(ppm, mg/m <sup>3</sup> , other-specify) |
|----------------|---|---|
| <u>B</u>       | <u>&lt;.0044 ppm</u>  | <u>UK</u>   |
|                |   |   |
|                |   |   |
|                |   |   |
|                |   |   |
|                |   |   |
|                |   |   |
|                |   |   |
|                |   |   |
|                |   |   |
|                |   |   |
|                |   |   |

☐ Mark (X) this box if you attach a continuation sheet.

9.07 For each labor category represented in question 9.06, indicate the 8-hour Time Weighted Average (TWA) exposure levels and the 15-minute peak exposure levels. Photocopy this question and complete it separately for each process type and work area.

CBI

☐ Process type ..... Adhesive Formulation

Work area ..... 3

| Labor Category | 8-hour TWA Exposure Level<br>(ppm, mg/m <sup>3</sup> , other-specify) | 15-Minute Peak Exposure Lev.<br>(ppm, mg/m <sup>3</sup> , other-specify) |
|----------------|---|--|
| <u>C</u>       | <u>&lt; .0044 ppm</u>   | <u>UK</u>  |
|                |   |  |
|                |   |  |
|                |   |  |
|                |   |  |
|                |   |  |
|                |   |  |
|                |   |  |
|                |   |  |
|                |   |  |
|                |   |  |
|                |   |  |
|                |   |  |
|                |   |  |
|                |   |  |

☐ Mark (X) this box if you attach a continuation sheet.

PART B WORK PLACE MONITORING PROGRAM

9.08 If you monitor worker exposure to the listed substance, complete the following table.

CBI

☐

| Sample/Test             | Work Area ID | Testing Frequency (per year) | Number of Samples (per test) | Who Samples <sup>1</sup> | Analyzed In-House (Y/N) | Number of Years Records Maintained |
|-------------------------|--------------|------------------------------|------------------------------|--------------------------|-------------------------|------------------------------------|
| Personal breathing zone | <u>1,2,3</u> | <u>0</u>                     | <u>0</u>                     | <u>NA</u>                | <u>NA</u>               | <u>Permanently</u>                 |
| General work area (air) | _____        | _____                        | _____                        | _____                    | _____                   | _____                              |
| Wipe samples            | _____        | _____                        | _____                        | _____                    | _____                   | _____                              |
| Adhesive patches        | _____        | _____                        | _____                        | _____                    | _____                   | _____                              |
| Blood samples           | _____        | _____                        | _____                        | _____                    | _____                   | _____                              |
| Urine samples           | _____        | _____                        | _____                        | _____                    | _____                   | _____                              |
| Respiratory samples     | _____        | _____                        | _____                        | _____                    | _____                   | _____                              |
| Allergy tests           | _____        | _____                        | _____                        | _____                    | _____                   | _____                              |
| Other (specify)         | _____        | _____                        | _____                        | _____                    | _____                   | _____                              |
| Other (specify)         | _____        | _____                        | _____                        | _____                    | _____                   | _____                              |
| Other (specify)         | _____        | _____                        | _____                        | _____                    | _____                   | _____                              |

<sup>1</sup>Use the following codes to designate who takes the monitoring samples:

A = Plant industrial hygienist

B = Insurance carrier

C = OSHA consultant

D = Other (specify) \_\_\_\_\_

☐ Mark (X) this box if you attach a continuation sheet.

9.09 For each sample type identified in question 9.08, describe the type of sampling and analytical methodology used for each type of sample.

☐

Sample Type

NA

Sampling and Analytical Methodology

9.10 If you conduct personal and/or ambient air monitoring for the listed substance, specify the following information for each equipment type used.

CBI

NA

☐

Equipment Type<sup>1</sup>

Detection Limit<sup>2</sup>

Manufacturer

Averaging Time (hr)

Model Number

<sup>1</sup>Use the following codes to designate personal air monitoring equipment types:

- A = Passive dosimeter
- B = Detector tube
- C = Charcoal filtration tube with pump
- D = Other (specify) \_\_\_\_\_

Use the following codes to designate ambient air monitoring equipment types:

- E = Stationary monitors located within work area
- F = Stationary monitors located within facility
- G = Stationary monitors located at plant boundary
- H = Mobile monitoring equipment (specify) \_\_\_\_\_
- I = Other (specify) \_\_\_\_\_

<sup>2</sup>Use the following codes to designate detection limit units:

- A = ppm
- B = Fibers/cubic centimeter (f/cc)
- C = Micrograms/cubic meter (µ/m<sup>3</sup>)

☐

Mark (X) this box if you attach a continuation sheet.

9.11 If you conduct routine medical tests for monitoring the health effects of exposure to the listed substance, specify the type and frequency of the tests.

CPI

☐

Test Description

Frequency  
(weekly, monthly, yearly, etc.)

Complete Physical Exam  
with CEA testing

Yearly

☐ Mark (X) this box if you attach a continuation sheet.

PART C ENGINEERING CONTROLS

9.12 Describe the engineering controls that you use to reduce or eliminate worker exposure to the listed substance. Photocopy this question and complete it separately for each process type and work area.

CBI

☐ Process type ..... Adhesive Formulation

Work area ..... I

| <u>Engineering Controls</u>                  | <u>Used<br/>(Y/N)</u>       | <u>Year<br/>Installed</u>   | <u>Upgraded<br/>(Y/N)</u>   | <u>Year<br/>Upgraded</u>    |
|--|-----------------------------|-----------------------------|-----------------------------|-----------------------------|
| Ventilation:                                 |                             |                             |                             |                             |
| Local exhaust                                | <u>Y</u>                    | <u>UK</u>                   | <u>N</u>                    | <u>NA</u>                   |
| General dilution                             | <u>                    </u> | <u>                    </u> | <u>                    </u> | <u>                    </u> |
| Other (specify)                              | <u>                    </u> | <u>                    </u> | <u>                    </u> | <u>                    </u> |
| Vessel emission controls                     | <u>                    </u> | <u>                    </u> | <u>                    </u> | <u>                    </u> |
| Mechanical loading or<br>packaging equipment | <u>                    </u> | <u>                    </u> | <u>                    </u> | <u>                    </u> |
| Other (specify)                              | <u>                    </u> | <u>                    </u> | <u>                    </u> | <u>                    </u> |

☐ Mark (X) this box if you attach a continuation sheet.

PART C ENGINEERING CONTROLS

9.12 Describe the engineering controls that you use to reduce or eliminate worker exposure to the listed substance. Photocopy this question and complete it separately for each process type and work area.

CE:

☐ Process type ..... Adhesive Formulation

Work area ..... 2

| <u>Engineering Control</u>                   | <u>Used<br/>(Y/N)</u> | <u>Year<br/>Installed</u> | <u>Upgraded<br/>(Y/N)</u> | <u>Year<br/>Upgraded</u> |
|--|-----------------------|---------------------------|---------------------------|--------------------------|
| Ventilation:                                 |                       |                           |                           |                          |
| Local exhaust                                | <u>Y</u>              | <u>UK</u>                 | <u>N</u>                  | <u>NA</u>                |
| General dilution                             | <u>          </u>     | <u>          </u>         | <u>          </u>         | <u>          </u>        |
| Other (specify)                              | <u>          </u>     | <u>          </u>         | <u>          </u>         | <u>          </u>        |
| Vessel emission controls                     | <u>          </u>     | <u>          </u>         | <u>          </u>         | <u>          </u>        |
| Mechanical loading or<br>packaging equipment | <u>          </u>     | <u>          </u>         | <u>          </u>         | <u>          </u>        |
| Other (specify)                              | <u>          </u>     | <u>          </u>         | <u>          </u>         | <u>          </u>        |

☐ Mark (X) this box if you attach a continuation sheet.



PART C ENGINEERING CONTROLS

9.12 Describe the engineering controls that you use to reduce or eliminate worker exposure to the listed substance. Photocopy this question and complete it separately for each process type and work area.

CE:

☐ Process type ..... Adhesive Formulation

Work area ..... 3

| <u>Engineering Controls</u>                  | <u>Used<br/>(Y/N)</u> | <u>Year<br/>Installed</u> | <u>Upgraded<br/>(Y/N)</u> | <u>Year<br/>Upgraded</u> |
|--|-----------------------|---------------------------|---------------------------|--------------------------|
| Ventilation:                                 |                       |                           |                           |                          |
| Local exhaust                                | _____                 | _____                     | _____                     | _____                    |
| General dilution                             | _____                 | _____                     | _____                     | _____                    |
| Other (specify)                              |                       |                           |                           |                          |
| <u>General Ventilation</u>                   | <u>Y</u>              | <u>UK</u>                 | <u>Y</u>                  | <u>UK</u>                |
| Vessel emission controls                     | _____                 | _____                     | _____                     | _____                    |
| Mechanical loading or<br>packaging equipment | _____                 | _____                     | _____                     | _____                    |
| Other (specify)                              |                       |                           |                           |                          |
| _____  | _____                 | _____                     | _____                     | _____                    |

☐ Mark (X) this box if you attach a continuation sheet.

9.13 Describe all equipment or process modifications you have made within the 3 years prior to the reporting year that have resulted in a reduction of worker exposure to the listed substance. For each equipment or process modification described, state the percentage reduction in exposure that resulted. Photocopy this question and complete it separately for each process type and work area.

CBI

☐ Process type ..... Adhesive Formulation

Work area ..... 1

| Equipment or Process Modification | Reduction in Worker Exposure Per Year (%) |
|-----------------------------------|---|
| <u>None</u>                       |   |
|                                   |   |
|                                   |   |
|                                   |   |
|                                   |   |

☐ Mark (X) this box if you attach a continuation sheet.

9.13 Describe all equipment or process modifications you have made within the 3 years prior to the reporting year that have resulted in a reduction of worker exposure to the listed substance. For each equipment or process modification described, state the percentage reduction in exposure that resulted. Photocopy this question and complete it separately for each process type and work area.

CBI

☐ Process type ..... Adhesive Formulation

Work area ..... 2

| Equipment or Process Modification | Reduction in Worker Exposure Per Year (%) |
|-----------------------------------|---|
| <u>None</u>                       |   |
|                                   |   |
|                                   |   |
|                                   |   |
|                                   |   |

☐ Mark (X) this box if you attach a continuation sheet.

9.13 Describe all equipment or process modifications you have made within the 3 years prior to the reporting year that have resulted in a reduction of worker exposure to the listed substance. For each equipment or process modification described, state the percentage reduction in exposure that resulted. Photocopy this question and complete it separately for each process type and work area.

CEI

☐ Process type ..... Adhesive Formulation

Work area ..... 3

| Equipment or Process Modification | Reduction in Worker Exposure Per Year (%) |
|-----------------------------------|---|
| <u>None</u>                       |   |
|                                   |   |
|                                   |   |
|                                   |   |
|                                   |   |

☐ Mark (X) this box if you attach a continuation sheet.

PART D PERSONAL PROTECTIVE AND SAFETY EQUIPMENT

9.14 Describe the personal protective and safety equipment that your workers wear or use in each work area in order to reduce or eliminate their exposure to the listed substance. Photocopy this question and complete it separately for each process type and work area.

CEI

☐ Process type ..... Adhesive Formulation

Work area ..... 1

| <u>Equipment Types</u>    | <u>Wear or<br/>Use<br/>(Y/N)</u> |
|---------------------------|----------------------------------|
| Respirators               | <u>Y</u>                         |
| Safety goggles/glasses    | <u>Y</u>                         |
| Face shields              | <u>N</u>                         |
| Coveralls                 | <u>N</u>                         |
| Bib aprons                | <u>N</u>                         |
| Chemical-resistant gloves | <u>Y</u>                         |
| Other (specify)           |                                  |
| <u>smock</u>              | <u>Y</u>                         |
|                           |                                  |

☐ Mark (X) this box if you attach a continuation sheet.

PART D PERSONAL PROTECTIVE AND SAFETY EQUIPMENT

9.14 Describe the personal protective and safety equipment that your workers wear or use in each work area in order to reduce or eliminate their exposure to the listed substance. Photocopy this question and complete it separately for each process type and work area.

CBI

☐ Process type ..... Adhesive Formulation

Work area ..... 2

| <u>Equipment Types</u>    | <u>Wear or<br/>Use<br/>(Y/N)</u> |
|---------------------------|----------------------------------|
| Respirators               | <u>N</u>                         |
| Safety goggles/glasses    | <u>Y</u>                         |
| Face shields              | <u>N</u>                         |
| Coveralls                 | <u>N</u>                         |
| Bib aprons                | <u>N</u>                         |
| Chemical-resistant gloves | <u>Y</u>                         |
| Other (specify)           |                                  |
| <u>SMOCK</u>              | <u>Y</u>                         |
|                           |                                  |

☐ Mark (X) this box if you attach a continuation sheet.

- 9.14 Describe the personal protective and safety equipment that your workers wear or use in each work area in order to reduce or eliminate their exposure to the listed substance. Photocopy this question and complete it separately for each process type and work area.

CEI

☐ Process type ..... Adhesive Formulation

Work area ..... 3

| <u>Equipment Types</u>    | <u>Wear or<br/>Use<br/>(Y/N)</u> |
|---------------------------|----------------------------------|
| Respirators               | <u>N</u>                         |
| Safety goggles/glasses    | <u>N</u>                         |
| Face shields              | <u>N</u>                         |
| Coveralls                 | <u>N</u>                         |
| Bib aprons                | <u>N</u>                         |
| Chemical-resistant gloves | <u>N</u>                         |
| Other (specify)           |                                  |
| _____                     | <u>N</u>                         |
| _____                     | _____                            |

☐ Mark (X) this box if you attach a continuation sheet.

9.15 If workers use respirators when working with the listed substance, specify for each process type, the work areas where the respirators are used, the type of respirators used, the average usage, whether or not the respirators were fit tested, and the type and frequency of the fit tests. Photocopy this question and complete it separately for each process type.

CBI

☐ Process type ..... Adhesive Formulation

| Work Area | Respirator Type                 | Average Usage <sup>1</sup> | Fit Tested (Y/N) | Type of Fit Test <sup>2</sup> | Frequency of Fit Tests (per year) |
|-----------|---------------------------------|----------------------------|------------------|-------------------------------|-----------------------------------|
| <u>1</u>  | <u>Permissible Chemical</u>     | <u>A</u>                   | <u>Y</u>         | <u>QL</u>                     | <u>A</u>                          |
|           | <u>Cartridge Respirator for</u> |                            |                  |                               |                                   |
|           | <u>Organic Vapors</u>           |                            |                  |                               |                                   |
|           | <u>(NIOSH/MSHA approved)</u>    |                            |                  |                               |                                   |

<sup>1</sup>Use the following codes to designate average usage:

A = Daily  
 B = Weekly  
 C = Monthly  
 D = Once a year  
 E = Other (specify) \_\_\_\_\_

<sup>2</sup>Use the following codes to designate the type of fit test:

QL = Qualitative  
 T = Quantitative

☐ Mark (X) this box if you attach a continuation sheet.



PART E WORK PRACTICES

- 9.19 Describe all of the work practices and administrative controls used to reduce or eliminate worker exposure to the listed substance (e.g., restrict entrance only to authorized workers, mark areas with warning signs, insure worker detection and monitoring practices, provide worker training programs, etc.). Photocopy this question and complete it separately for each process type and work area.

CBI

☐

Process type ..... Adhesive Formulation

Work area ..... 1

1. Mechanical Ventilation

2. Respirator Protection

3. Eye Protection Required

4. HAZCOM Training

- 9.20 Indicate (X) how often you perform each housekeeping task used to clean up routine leaks or spills of the listed substance. Photocopy this question and complete it separately for each process type and work area.

Process type ..... Adhesive Formulation

Work area ..... 1

| <u>Housekeeping Tasks</u>  | <u>Less Than<br/>Once Per Day</u> | <u>1-2 Times<br/>Per Day</u> | <u>3-4 Times<br/>Per Day</u> | <u>More Than 4<br/>Times Per Day</u> |
|----------------------------|-----------------------------------|------------------------------|------------------------------|--------------------------------------|
| Sweeping                   | _____                             | _____                        | _____                        | _____                                |
| Vacuuming                  | _____                             | _____                        | _____                        | _____                                |
| Water flushing of floors   | _____                             | _____                        | _____                        | _____                                |
| Other (specify)            |                                   |                              |                              |                                      |
| <u>Wash with</u>           | <u>X</u>                          | _____                        | _____                        | _____                                |
| <u>Methyl Ethyl Ketone</u> |                                   |                              |                              |                                      |
| <u>(MEK) and Kimwipes</u>  |                                   |                              |                              |                                      |

☐ Mark (X) this box if you attach a continuation sheet.

PART E WORK PRACTICES

- 9.19 Describe all of the work practices and administrative controls used to reduce or eliminate worker exposure to the listed substance (e.g., restrict entrance only to authorized workers, mark areas with warning signs, insure worker detection and monitoring practices, provide worker training programs, etc.). Photocopy this question and complete it separately for each process type and work area.

CBI

☐

Process type ..... Adhesive Formulation

Work area ..... 2

1. Mechanical Ventilation

2. Eye Protection Required

3. HAZCOM Training

- 9.20 Indicate (X) how often you perform each housekeeping task used to clean up routine leaks or spills of the listed substance. Photocopy this question and complete it separately for each process type and work area.

Process type ..... Adhesive Formulation

Work area ..... 2

| <u>Housekeeping Tasks</u>  | <u>Less Than<br/>Once Per Day</u> | <u>1-2 Times<br/>Per Day</u> | <u>3-4 Times<br/>Per Day</u> | <u>More Than 4<br/>Times Per Day</u> |
|----------------------------|-----------------------------------|------------------------------|------------------------------|--------------------------------------|
| Sweeping                   | _____                             | _____                        | _____                        | _____                                |
| Vacuuming                  | _____                             | _____                        | _____                        | _____                                |
| Water flushing of floors   | _____                             | _____                        | _____                        | _____                                |
| Other (specify)            | _____                             | _____                        | _____                        | _____                                |
| <u>Wash with</u>           | <u>X</u>                          | _____                        | _____                        | _____                                |
| <u>Methyl Ethyl Ketone</u> |                                   |                              |                              |                                      |
| <u>(MEK) and Kimwipes</u>  |                                   |                              |                              |                                      |

☐ Mark (X) this box if you attach a continuation sheet.

PART E WORK PRACTICES

- 9.19 Describe all of the work practices and administrative controls used to reduce or eliminate worker exposure to the listed substance (e.g., restrict entrance only to authorized workers, mark areas with warning signs, insure worker detection and monitoring practices, provide worker training programs, etc.). Photocopy this question and complete it separately for each process type and work area.

CBI

☐

Process type ..... Adhesive Formulation

Work area ..... 3

1. HAZCOM Training

- 9.20 Indicate (X) how often you perform each housekeeping task used to clean up routine leaks or spills of the listed substance. Photocopy this question and complete it separately for each process type and work area.

Process type ..... Adhesive Formulation

Work area ..... 3

NA

| <u>Housekeeping Tasks</u> | <u>Less Than<br/>Once Per Day</u> | <u>1-2 Times<br/>Per Day</u> | <u>3-4 Times<br/>Per Day</u> | <u>More Than 4<br/>Times Per Day</u> |
|---------------------------|-----------------------------------|------------------------------|------------------------------|--------------------------------------|
| Sweeping                  | _____                             | _____                        | _____                        | _____                                |
| Vacuuming                 | _____                             | _____                        | _____                        | _____                                |
| Water flushing of floors  | _____                             | _____                        | _____                        | _____                                |
| Other (specify)           | _____                             | _____                        | _____                        | _____                                |

☐ Mark (X) this box if you attach a continuation sheet.

9.21 Do you have a written medical action plan for responding to routine or emergency exposure to the listed substance?

Routine exposure

Yes .....

No .....

Emergency exposure

Yes .....

No .....

If yes, where are copies of the plan maintained?

Routine exposure: \_\_\_\_\_

Emergency exposure: \_\_\_\_\_

9.22 Do you have a written leak and spill cleanup plan that addresses the listed substance? Circle the appropriate response.

☒ Yes .....

No .....

If yes, where are copies of the plan maintained? Safety Office, Emergency Coordinator's Office

Has this plan been coordinated with state or local government response organizations? Circle the appropriate response.

☒ Yes .....

No .....

9.23 Who is responsible for monitoring worker safety at your facility? Circle the appropriate response.

Plant safety specialist .....

Insurance carrier .....

OSHA consultant .....

Other (specify) \_\_\_\_\_

☐ Mark (X) this box if you attach a continuation sheet.

## SECTION 10 ENVIRONMENTAL RELEASE

### General Instructions:

Complete Part E (questions 10.23-10.35) for each non-routine release involving the listed substance that occurred during the reporting year. Report on all releases that are equal to or greater than the listed substance's reportable quantity value, RQ, unless the release is federally permitted as defined in 42 U.S.C. 9601, or is specifically excluded under the definition of release as defined in 40 CFR 302.3(22). Reportable quantities are codified in 40 CFR Part 302. If the listed substance is not a hazardous substance under the Comprehensive Environmental Response, Compensation, and Liability Act of 1980 (CERCLA) and thus, does not have an RQ, then report releases that exceed 2,270 kg. If such a substance however, is designated as a CERCLA hazardous substance, then report those releases that are equal to or greater than the RQ. The facility may have answered these questions or similar questions under the Agency's Accidental Release Information Program and may already have this information readily available. Assign a number to each release and use this number throughout this part to identify the release. Releases over more than a 24-hour period are not single releases, i.e., the release of a chemical substance equal to or greater than an RQ must be reported as a separate release for each 24-hour period the release exceeds the RQ.

For questions 10.25-10.35, answer the questions for each release identified in question 10.23. Photocopy these questions and complete them separately for each release.

### PART A GENERAL INFORMATION

10.01 Where is your facility located? Circle all appropriate responses.

CBI

- ☐ Industrial area ..... ①
- Urban area ..... 2
- Residential area ..... 3
- Agricultural area ..... 4
- Rural area ..... 5
- Adjacent to a park or a recreational area ..... 6
- Within 1 mile of a navigable waterway ..... 7
- Within 1 mile of a school, university, hospital, or nursing home facility ..... ⑧
- Within 1 mile of a non-navigable waterway ..... ⑨
- Other (specify) \_\_\_\_\_ 10

☐ Mark (X) this box if you attach a continuation sheet.

- 10.02 Specify the exact location of your facility (from central point where process unit is located) in terms of latitude and longitude or Universal Transverse Mercader (UTM) coordinates.

Latitude ..... 67 . 21 . 00

Longitude ..... 54 . 57 . 45

UTM coordinates ..... Zone UK , Northing UK , Easting UK

- 10.03 If you monitor meteorological conditions in the vicinity of your facility, provide the following information.

Average annual precipitation ..... inches/year

Predominant wind direction .....

- 10.04 Indicate the depth to groundwater below your facility.

Depth to groundwater ..... meters

- 10.05 For each on-site activity listed, indicate (Y/N/NA) all routine releases of the listed substance to the environment. (Refer to the instructions for a definition of CBI Y, N, and NA.)

☐

| On-Site Activity            | Environmental Release |       |      |
|-----------------------------|-----------------------|-------|------|
|                             | Air                   | Water | Land |
| Manufacturing               | NA                    |       |      |
| Importing                   | NA                    |       |      |
| Processing                  | Y                     | N     | N    |
| Otherwise used              | NA                    |       |      |
| Product or residual storage | N                     | N     | N    |
| Disposal                    | NA                    |       |      |
| Transport                   | NA                    |       |      |

☐ Mark (X) this box if you attach a continuation sheet.

10.06 Provide the following information for the listed substance and specify the level of precision for each item. (Refer to the instructions for further explanation and an example.)

CBI

☐

|   |           |               |
|---|-----------|---------------|
| Quantity discharged to the air .....  | <u>UK</u> | kg/yr ± _____ |
| Quantity discharged in wastewaters .....  | <u>NA</u> | kg/yr ± _____ |
| Quantity managed as other waste in on-site treatment, storage, or disposal units .....  | <u>NA</u> | kg/yr ± _____ |
| Quantity managed as other waste in off-site treatment, storage, or disposal units ..... | <u>NA</u> | kg/yr ± _____ |

☐ Mark (X) this box if you attach a continuation sheet.

- 10.07 Complete the following table for each process stream containing the listed substance as identified in your process block or residual treatment block flow diagram(s). Photocopy this question and complete it separately for each process type.

CBI

☐

Process type ..... Adhesive Formulation

| Process Stream ID Code | Media Affected <sup>1</sup> | Average Amount of Listed Substance Released <sup>2</sup> | Number of Batches/Year | Days of Operation/Year |
|------------------------|-----------------------------|--|------------------------|------------------------|
| <u>7G</u>              | <u>A</u>                    | <u>UK</u>  | <u>27</u>              | <u>27</u>              |
| <u>7H</u>              | <u>NA</u>                   | <u>UK</u>  | <u>27</u>              | <u>27</u>              |
| <u>7X</u>              | <u>A</u>                    | <u>UK</u>  | <u>2847</u>            | <u>235</u>             |
| <u>7Y</u>              | <u>NA</u>                   | <u>UK</u>  | <u>2847</u>            | <u>235</u>             |
| <u>7CC</u>             | <u>NA</u>                   | <u>UK</u>  | <u>2847</u>            | <u>235</u>             |
| <u>7FF</u>             | <u>NA</u>                   | <u>.089 (A)</u>  | <u>27</u>              | <u>27</u>              |
| <u>7II</u>             | <u>NA</u>                   | <u>.024 (A)</u>  | <u>2820</u>            | <u>235</u>             |
|                        |                             |  |                        |                        |
|                        |                             |  |                        |                        |

<sup>1</sup>Use the following codes to designate the media affected:

- A = Air
- B = Land
- C = Groundwater
- D = POTW
- E = Navigable waterway
- F = Non-navigable waterway
- G = Other (specify) \_\_\_\_\_

<sup>2</sup>Specify the average amount of listed substance released to the environment and use the following codes to designate the units used to measure the release:

- A = kg/day
- B = kg/batch

☐ Mark (X) this box if you attach a continuation sheet.



10.08 Describe the control technologies used to minimize release of the listed substance for each process stream containing the listed substance as identified in your process block or residual treatment block flow diagram(s). Photocopy this question and complete it separately for each process type.

CBI

☐ Process type ..... Adhesive Formulation

| <u>Stream ID Code</u> | <u>Control Technology</u> | <u>Percent Efficiency</u> |
|-----------------------|---------------------------|---------------------------|
| <u>7G</u>             | <u>None</u>               |                           |
| <u>7H</u>             | <u>None</u>               |                           |
| <u>7X</u>             | <u>None</u>               |                           |
| <u>7Y</u>             | <u>None</u>               |                           |
| <u>7CC</u>            | <u>None</u>               |                           |
| <u>7FF</u>            | <u>None</u>               |                           |
| <u>7II</u>            | <u>None</u>               |                           |
|                       |                           |                           |
|                       |                           |                           |
|                       |                           |                           |

☐ Mark (X) this box if you attach a continuation sheet.

PART B RELEASE TO AIR

- 10.09 Point Source Emissions -- Identify each emission point source containing the listed substance in terms of a Stream ID Code as identified in your process block or residual treatment block flow diagram(s), and provide a description of each point source. Do not include raw material and product storage vents, or fugitive emission sources (e.g., equipment leaks). Photocopy this question and complete it separately for each process type.

Process type .....

Adhesive Formulation

Point Source  
ID Code

Description of Emission Point Source

7G

Materials Lab Mixer Vent

7X

Resin Application Lab Mix Area Vent

☐ Mark (X) this box if you attach a continuation sheet.

☐ Mark (X) this box if you attach a continuation sheet.

10.10 Emission Characteristics - Characterize the emissions for each Point Source ID Code identified in question 10.09 by completing the following table.

CBI

☐

| Point Source ID Code | Physical State <sup>1</sup> | Average Emissions (kg/day) | Frequency <sup>2</sup> (days/yr) | Duration <sup>3</sup> (min/day) | Average Emission Factor <sup>4</sup> | Maximum Emission Rate (kg/min) | Maximum Emission Rate Frequency (events/yr) | Maximum Emission Rate Duration (min/event) |
|----------------------|-----------------------------|----------------------------|----------------------------------|---------------------------------|--------------------------------------|--------------------------------|---|--|
| 7G                   | G                           | UK                         | 39                               | 90                              | NA                                   | UK                             | 39  | UK   |
| 7X                   | G                           | UK                         | 235                              | 90                              | NA                                   | UK                             | 235   | UK   |
|                      |                             |                            |                                  |                                 |                                      |                                |   |  |
|                      |                             |                            |                                  |                                 |                                      |                                |   |  |
|                      |                             |                            |                                  |                                 |                                      |                                |   |  |
|                      |                             |                            |                                  |                                 |                                      |                                |   |  |
|                      |                             |                            |                                  |                                 |                                      |                                |   |  |
|                      |                             |                            |                                  |                                 |                                      |                                |   |  |
|                      |                             |                            |                                  |                                 |                                      |                                |   |  |
|                      |                             |                            |                                  |                                 |                                      |                                |   |  |
|                      |                             |                            |                                  |                                 |                                      |                                |   |  |
|                      |                             |                            |                                  |                                 |                                      |                                |   |  |
|                      |                             |                            |                                  |                                 |                                      |                                |   |  |
|                      |                             |                            |                                  |                                 |                                      |                                |   |  |
|                      |                             |                            |                                  |                                 |                                      |                                |   |  |

<sup>1</sup>Use the following codes to designate physical state at the point of release:

G = Gas; V = Vapor; P = Particulate; A = Aerosol; O = Other (specify) \_\_\_\_\_

<sup>2</sup>Frequency of emission at any level of emission

<sup>3</sup>Duration of emission at any level of emission

<sup>4</sup>Average Emission Factor -- Provide estimated ( $\pm$  25 percent) emission factor (kg of emission per kg of production of listed substance)

10.11 Stack Parameters -- Identify the stack parameters for each Point Source ID Code identified in question 10.09 by completing the following table.

CBI

☐

| Point<br>Source<br>ID<br>Code | Stack<br>Height(m) | Stack<br>Inner<br>Diameter<br>(at outlet)<br>(m) | Exhaust<br>Temperature<br>(°C) | Emission<br>Exit<br>Velocity<br>(m/sec) | Building<br>Height(m) <sup>1</sup> | Building<br>Width(m) <sup>2</sup> | Vent.<br>Type <sup>3</sup> |
|-------------------------------|--------------------|--|--------------------------------|---|------------------------------------|-----------------------------------|----------------------------|
| 7G                            | 4.572              | (3.6576 x 4.2672)                                | 21.1°                          | 3.3                                     | 5.1816                             | 152.4                             | H                          |
| 7X                            | 4.572              | 3.048  | 21.1°                          | .51                                     | 5.1816                             | 152.4                             | H                          |
|                               |                    |  |                                |   |                                    |                                   |                            |
|                               |                    |  |                                |   |                                    |                                   |                            |
|                               |                    |  |                                |   |                                    |                                   |                            |
|                               |                    |  |                                |   |                                    |                                   |                            |
|                               |                    |  |                                |   |                                    |                                   |                            |
|                               |                    |  |                                |   |                                    |                                   |                            |
|                               |                    |  |                                |   |                                    |                                   |                            |
|                               |                    |  |                                |   |                                    |                                   |                            |
|                               |                    |  |                                |   |                                    |                                   |                            |
|                               |                    |  |                                |   |                                    |                                   |                            |
|                               |                    |  |                                |   |                                    |                                   |                            |
|                               |                    |  |                                |   |                                    |                                   |                            |
|                               |                    |  |                                |   |                                    |                                   |                            |
|                               |                    |  |                                |   |                                    |                                   |                            |

<sup>1</sup>Height of attached or adjacent building

<sup>2</sup>Width of attached or adjacent building

<sup>3</sup>Use the following codes to designate vent type:

H = Horizontal

V = Vertical

☐ Mark (X) this box if you attach a continuation sheet.

- 10.12 If the listed substance is emitted in particulate form, indicate the particle size distribution for each Point Source ID Code identified in question 10.09. Photocopy this question and complete it separately for each emission point source.

CBI

(NA)

☐

Point source ID code .....

Size Range (microns)

Mass Fraction (% ± % precision)

< 1

≥ 1 to < 10

≥ 10 to < 30

≥ 30 to < 50

≥ 50 to < 100

≥ 100 to < 500

≥ 500

Total = 100%

☐ Mark (X) this box if you attach a continuation sheet.

## PART C FUGITIVE EMISSIONS

- 10.13 Equipment Leaks -- Complete the following table by providing the number of equipment types listed which are exposed to the listed substance and which are in service according to the specified weight percent of the listed substance passing through the component. Do this for each process type identified in your process block or residual treatment block flow diagram(s). Do not include equipment types that are not exposed to the listed substance. If this is a batch or intermittently operated process, give an overall percentage of time per year that the process type is exposed to the listed substance. Photocopy this question and complete it separately for each process type.

CBI

☐Process type ..... Adhesive Formulation

Percentage of time per year that the listed substance is exposed to this process type .....

(NA)

Number of Components in Service by Weight Percent  
of Listed Substance in Process Stream

| Equipment Type  | Less<br>than 5% | 5-10% | 11-25% | 26-75% | 76-99% | Greater<br>than 99% |
|---|-----------------|-------|--------|--------|--------|---------------------|
| Pump seals <sup>1</sup>                                     |                 |       |        |        |        |                     |
| Packed  |                 |       |        |        |        |                     |
| Mechanical  |                 |       |        |        |        |                     |
| Double mechanical <sup>2</sup>                              |                 |       |        |        |        |                     |
| Compressor seals <sup>1</sup>                               |                 |       |        |        |        |                     |
| Flanges   |                 |       |        |        |        |                     |
| Valves  |                 |       |        |        |        |                     |
| Gas <sup>3</sup>  |                 |       |        |        |        |                     |
| Liquid  |                 |       |        |        |        |                     |
| Pressure relief devices <sup>4</sup><br>(Gas or vapor only) |                 |       |        |        |        |                     |
| Sample connections  |                 |       |        |        |        |                     |
| Gas   |                 |       |        |        |        |                     |
| Liquid  |                 |       |        |        |        |                     |
| Open-ended lines <sup>5</sup><br>(e.g., purge, vent)        |                 |       |        |        |        |                     |
| Gas   |                 |       |        |        |        |                     |
| Liquid  |                 |       |        |        |        |                     |

<sup>1</sup>List the number of pump and compressor seals, rather than the number of pumps or compressors

10.13 continued on next page

☐

Mark (X) this box if you attach a continuation sheet.

10.13 (continued)

<sup>2</sup>If double mechanical seals are operated with the barrier (B) fluid at a pressure greater than the pump stuffing box pressure and/or equipped with a sensor (S) that will detect failure of the seal system, the barrier fluid system, or both, indicate with a "B" and/or an "S", respectively

<sup>3</sup>Conditions existing in the valve during normal operation

<sup>4</sup>Report all pressure relief devices in service, including those equipped with control devices

<sup>5</sup>Lines closed during normal operation that would be used during maintenance operations

10.14 Pressure Relief Devices with Controls -- Complete the following table for those pressure relief devices identified in 10.13 to indicate which pressure relief devices in service are controlled. If a pressure relief device is not controlled, enter "None" under column c.

CBI

☐

NA

| a.<br>Number of<br>Pressure Relief Devices | b.<br>Percent Chemical<br>in Vessel <sup>1</sup> | c.<br>Control Device | d.<br>Estimated<br>Control Efficiency <sup>2</sup> |
|--|--|----------------------|--|
|  |  |                      |  |
|  |  |                      |  |
|  |  |                      |  |
|  |  |                      |  |
|  |  |                      |  |
|  |  |                      |  |
|  |  |                      |  |
|  |  |                      |  |
|  |  |                      |  |
|  |  |                      |  |
|  |  |                      |  |

<sup>1</sup>Refer to the table in question 10.13 and record the percent range given under the heading entitled "Number of Components in Service by Weight Percent of Listed Substance" (e.g., <5%, 5-10%, 11-25%, etc.)

<sup>2</sup>The EPA assigns a control efficiency of 100 percent for equipment leaks controlled with rupture discs under normal operating conditions. The EPA assigns a control efficiency of 98 percent for emissions routed to a flare under normal operating conditions

☐ Mark (X) this box if you attach a continuation sheet.

- 10.15 Equipment Leak Detection -- If a formal leak detection and repair program is in place, complete the following table regarding those leak detection and repair procedures. Photocopy this question and complete it separately for each process type.

CBI

(NA)

☐

Process type .....

Adhesive Formulation

| Equipment Type                              | Leak Detection   | Detection Device <sup>1</sup> | Frequency of Leak Detection (per year) | Repairs Initiated (days after detection) | Repairs Completed (days after initiated) |
|---|--|-------------------------------|--|--|--|
|   | Concentration (ppm or mg/m <sup>3</sup> ) Measured at _____ Inches from Source |                               |  |  |  |
| Pump seals                                  |  |                               |  |  |  |
| Packed                                      | _____  | _____                         | _____                                  | _____                                    | _____                                    |
| Mechanical                                  | _____  | _____                         | _____                                  | _____                                    | _____                                    |
| Double mechanical                           | _____  | _____                         | _____                                  | _____                                    | _____                                    |
| Compressor seals                            | _____  | _____                         | _____                                  | _____                                    | _____                                    |
| Flanges                                     | _____  | _____                         | _____                                  | _____                                    | _____                                    |
| Valves                                      |  |                               |  |  |  |
| Gas   | _____  | _____                         | _____                                  | _____                                    | _____                                    |
| Liquid                                      | _____  | _____                         | _____                                  | _____                                    | _____                                    |
| Pressure relief devices (gas or vapor only) | _____  | _____                         | _____                                  | _____                                    | _____                                    |
| Sample connections                          |  |                               |  |  |  |
| Gas   | _____  | _____                         | _____                                  | _____                                    | _____                                    |
| Liquid                                      | _____  | _____                         | _____                                  | _____                                    | _____                                    |
| Open-ended lines                            |  |                               |  |  |  |
| Gas   | _____  | _____                         | _____                                  | _____                                    | _____                                    |
| Liquid                                      | _____  | _____                         | _____                                  | _____                                    | _____                                    |

<sup>1</sup>Use the following codes to designate detection device:

POVA = Portable organic vapor analyzer

FPM = Fixed point monitoring

O = Other (specify) \_\_\_\_\_

☐

Mark (X) this box if you attach a continuation sheet.



☐ Mark (X) this box if you attach a continuation sheet.

10.16 Raw Material, Intermediate and Product Storage Emissions - - Complete the following table by providing the information on each liquid raw material, intermediate, and product storage vessel containing the listed substance as identified in your process block or residual treatment block flow diagram(s).

CRI

☐ NA

| Vessel Type <sup>1</sup> | Floating Roof <sup>2</sup> Seals <sup>2</sup> | Composition of Stored Materials <sup>3</sup> | Throughput (liters per year) | Vessel Filling Rate (gpm) | Vessel Filling Duration (min) | Vessel Inner Diameter (m) | Vessel Height (m) | Operating Vessel Volume (l) | Vessel Emission Controls <sup>4</sup> | Design Flow Rate <sup>5</sup> | Vent Diameter (cm) | Control Efficiency (%) | Basis for Estimate <sup>6</sup> |
|--------------------------|---|--|------------------------------|---------------------------|-------------------------------|---------------------------|-------------------|-----------------------------|---------------------------------------|-------------------------------|--------------------|------------------------|---------------------------------|
|                          |   |  |                              |                           |                               |                           |                   |                             |                                       |                               |                    |                        |                                 |
|                          |   |  |                              |                           |                               |                           |                   |                             |                                       |                               |                    |                        |                                 |
|                          |   |  |                              |                           |                               |                           |                   |                             |                                       |                               |                    |                        |                                 |
|                          |   |  |                              |                           |                               |                           |                   |                             |                                       |                               |                    |                        |                                 |
|                          |   |  |                              |                           |                               |                           |                   |                             |                                       |                               |                    |                        |                                 |
|                          |   |  |                              |                           |                               |                           |                   |                             |                                       |                               |                    |                        |                                 |
|                          |   |  |                              |                           |                               |                           |                   |                             |                                       |                               |                    |                        |                                 |
|                          |   |  |                              |                           |                               |                           |                   |                             |                                       |                               |                    |                        |                                 |
|                          |   |  |                              |                           |                               |                           |                   |                             |                                       |                               |                    |                        |                                 |

<sup>1</sup>Use the following codes to designate vessel type:

- P = Fixed roof
- CIF = Contact internal floating roof
- NCIF = Noncontact internal floating roof
- EFR = External floating roof
- P = Pressure vessel (indicate pressure rating)
- H = Horizontal
- U = Underground

<sup>2</sup>Use the following codes to designate floating roof seals:

- MS1 = Mechanical shoe, primary
- MS2 = Shoe-mounted secondary
- MS2R = Rim-mounted, secondary
- LM1 = Liquid-mounted resilient filled seal, primary
- LM2 = Rim-mounted shield
- LW = Weather shield
- VM1 = Vapor mounted resilient filled seal, primary
- VM2 = Rim-mounted secondary
- VMW = Weather shield

<sup>3</sup>Indicate weight percent of the listed substance. Include the total volatile organic content in parenthesis

<sup>4</sup>Other than floating roofs

<sup>5</sup>Gas/vapor flow rate the emission control device was designed to handle (specify flow rate units)

<sup>6</sup>Use the following codes to designate basis for estimate of control efficiency:

- C = Calculations
- S = Sampling

PART E NON-ROUTINE RELEASES

10.23 Indicate the date and time when the release occurred and when the release ceased or was stopped. If there were more than six releases, attach a continuation sheet and list all releases.

NA

| <u>Release</u> | <u>Date Started</u> | <u>Time (am/pm)</u> | <u>Date Stopped</u> | <u>Time (am/pm)</u> |
|----------------|---------------------|---------------------|---------------------|---------------------|
| 1              |                     |                     |                     |                     |
| 2              |                     |                     |                     |                     |
| 3              |                     |                     |                     |                     |
| 4              |                     |                     |                     |                     |
| 5              |                     |                     |                     |                     |
| 6              |                     |                     |                     |                     |

10.24 Specify the weather conditions at the time of each release.

| <u>Release</u> | <u>Wind Speed (km/hr)</u> | <u>Wind Direction</u> | <u>Humidity (%)</u> | <u>Temperature (°C)</u> | <u>Precipitation (Y/N)</u> |
|----------------|---------------------------|-----------------------|---------------------|-------------------------|----------------------------|
| 1              |                           |                       |                     |                         |                            |
| 2              |                           |                       |                     |                         |                            |
| 3              |                           |                       |                     |                         |                            |
| 4              |                           |                       |                     |                         |                            |
| 5              |                           |                       |                     |                         |                            |
| 6              |                           |                       |                     |                         |                            |

☐ Mark (X) this box if you attach a continuation sheet.

Attach continuation sheets for sections of this form and optional information after this page. In column 1, clearly identify the continuation sheet by listing the question number to which it relates. In column 2, enter the inclusive page numbers of the continuation sheet for each question number.

[illegible]

132

APPENDIX II: Substantiation Form and Instructions  
to Accompany Claims of Confidentiality Under the  
Comprehensive Assessment Information Rule (CAIR)

If you assert one or more claims of confidentiality for information submitted on a Comprehensive Assessment Information Rule (CAIR) form, please answer, pursuant to 40 CFR 740.219, all the following questions in the space provided. Type all responses. If you need more space to answer a particular question, please use additional sheets. If you use additional sheets, be sure to include the section, number, and (if applicable) subpart of the question being answered, and write your facility's name and Dun & Bradstreet Number in the lower right-hand corner of each sheet. A completed copy of this form must accompany all submissions containing one or more claims of confidentiality. Failure to do so will result in the waiver of your claim of confidentiality.

EPA has identified six information categories as those which encompass all claims of confidentiality. These are: Submitter identity (h); Substance identity (i); Volume manufactured, imported, or processed (j); Use information (k); Process information (l); and Other information (m). Respondents who assert a CBI claim on the reporting form must mark the letter(s) (h through m) that represent(s) the appropriate category(ies) of confidentiality in the box adjacent to the question, and answer the questions in this form.

Respondents who assert a CBI claim for information submitted under CAIR must also provide EPA with sanitized and unsanitized versions of their submissions. The unsanitized version must be complete and contain all information being claimed as confidential. The sanitized copy must contain only information not claimed as confidential. EPA will place the second copy of the submission in the public file. Failure to submit the second copy of the form at the time the respondent submits the reporting form containing confidential information or after receipt of a notice from EPA thereafter will result in a waiver of the respondent's claim of confidentiality.

Please indicate the CAS Registry Number (if known) or chemical name (if the CAS Registry Number is not known) for the substance that is the subject of this form:

584-84-9

If you are reporting a tradename, please provide the tradename for the substance that is the subject of this form:

Solithane 113

Does this form contain CBI? ☐ Yes ☒ No

If the answer to this question is yes, you must bracket the text claimed as CBI. Any unbracketed information may be placed in the public file.

☐ Mark (X) this box if you attach a continuation sheet.



General Electric Company



FIRST CLASS MAIL



*Jim B. Isoppe* GE Aerospace  
Automated Systems Department  
P.O. Box 588, Burlington, MA 01803

Document Processing Center  
Office of Toxic Substances, JS-790  
US EPA  
401 M. Street, SW  
Washington, DC 20460

AS-2741 (2-88)